

LIBRARY

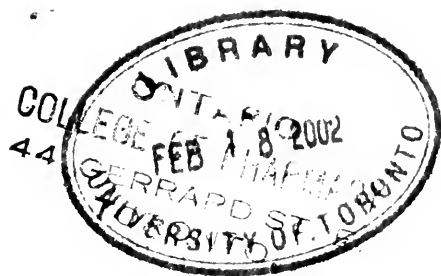


LIBRARY
ONTARIO COLLEGE

OF
FEB 18 2002
PHARMACY

UNIVERSITY OF TORONTO

No. 849



COMPARE YOUR PRICE LISTS

A CAREFUL STUDY

*Prac-
tically
85%
Of
Lilly
Products
Are
Subject
To
Best
Discount
40%
Through
Your
Jobber*

*Study
The
Parts
Of
Other
Lists
Subject
To
"Best"
Dis-
counts*

of our price list will show you that a very large percentage of your pharmaceutical requirements are subject to 40 per cent. discount without contract obligation, through your jobber. Net prices to all retailers on articles in PART II., which is relatively small, are on the same net basis as commonly given by competitors to their preferred customers who are under contract to buy a given quantity direct within a specified time.

IN VIEW OF THESE FACTS

does it seem wise to obligate yourself to buy a large amount of pharmaceuticals direct from the manufacturer within a definite period when such low and liberal terms can be secured at any time through your jobber by specifying Lilly?

COMPARE PRICE LISTS

STUDY your past purchases and see if Lilly specifications through your jobber will not help you to keep better stock, lower your liabilities and give you more cash at the end of the year.

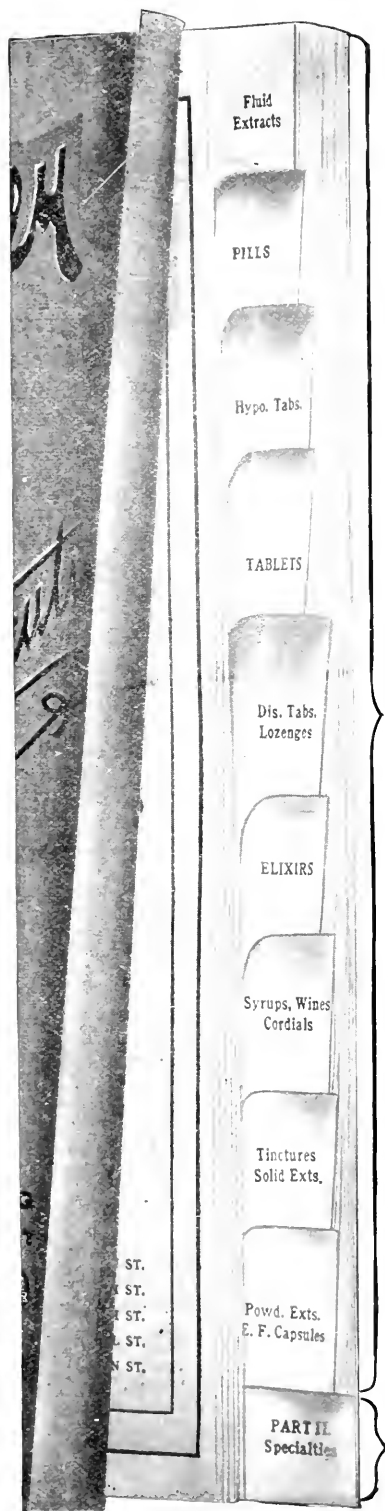
*YOUR JOBBER CARRIES THE
COMPLETE LILLY LINE :: ::*

ELI LILLY & CO.

INDIANAPOLIS
NEW YORK

CHICAGO
ST. LOUIS

KANSAS CITY
NEW ORLEANS



NEW FOURTH EDITION—REVISED AND REWRITTEN

A Text-book of Chemistry

Intended for the Use of Pharmaceutical and Medical Students

By SAMUEL P. SADTLER, Ph.D., LL.D.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry in the Philadelphia College of Pharmacy, and Chemical Editor of United States Dispensatory.

AND

VIRGIL COBLENTZ, Ph.D., F.C.S.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry and Physics in the Department of Pharmacy of Columbia University.

Octavo. 749 pages. 141 illustrations. Cloth, \$3.50. Sheep, \$4.00. Fourth Edition

The purpose of this work has been to offer a text-book on Chemistry which would combine scientific accuracy and completeness with special reference to the needs of the pharmaceutical and medical students, treating all compounds mentioned in the United States Pharmacopoeia. The authors have had many years' experience as teachers in professional schools where Chemistry is considered one of the foundation-stones upon which to build a technical education. This experience has convinced the authors that the subject must be taught in a way which, while thoroughly scientific, is yet distinctly adapted to the ultimate uses of the students.

TABLET MANUFACTURE

ITS HISTORY, PHARMACY AND PRACTICE

By JOSEPH R. WOOD, M A., Ph.G.

12mo. 23 illustrations. \$2.00 net. Waterproof Cloth.

This volume has been written from knowledge gained by the author through many years of practical experience, to meet the needs of pharmacists who manufacture tablets either in large or small quantities. While an attempt has been made to treat the subject broadly, its nature is such as to demand the consideration of details.

Special attention has been given to causes and remedies of difficulties encountered in manufacture, such as capping, picking and sticking. Also, to the method of treatment of individual substances.

J. B. LIPPINCOTT COMPANY

Publishers

Philadelphia

The American Pharmaceutical Association

Organized: Philadelphia, 1852.

Incorporated: Washington, D. C., 1888.

Sixtieth Annual Convention, Denver, Colo., August 19, 1912.

OFFICIAL ROSTER FOR 1911-1912.

GENERAL OFFICERS.

President—JOHN G. GODDING, 278 Dartmouth St., Boston, Mass.
Honorary President—HENRY BIROTH,* 130 Vermont St., Blue Island, Ill.
First Vice President—WILHELM BODEMANN, Hyde Park, Chicago, Ill.
Second Vice President—CHARLES M. FORD, 1236 Ogden St., Denver, Col.
Third Vice President—ERNEST BERGER, Tampa, Fla.
Treasurer—HENRY M. WHELPLEY, 2342 Albion Place, St. Louis, Mo.
General Secretary and Editor of the Journal—JAMES H. BEAL, Scio, Ohio.
Reporter on the Progress of Pharmacy—C. LEWIS DIEHL, 932 Cherokee Road, Louisville, Ky.
Local Secretary—CHARLES M. FORD, Denver, Col.

OFFICERS OF THE COUNCIL FOR 1911-1912.

Chairman—EUGENE G. EBERLE, 1804 Jackson St., Dallas, Tex.
Vice Chairman—JAMES M. GOOD, 2601 Olive St., St. Louis, Mo.
Secretary—JOSEPH W. ENGLAND, 415 N. 33d St., Philadelphia, Pa.

MEMBERS OF THE COUNCIL FOR 1911-1912.

(Elected by the Association.)

OSCAR OLDBERG, Chicago, Ill.....	Term expires 1912
CHARLES E. CASPARI, St. Louis, Mo.....	Term expires 1912
GEORGE M. BERINGER, Camden, N. J.....	Term expires 1912
J. H. BEAL, Scio, O.....	Term expires 1913
J. P. REMINGTON, Philadelphia, Pa.....	Term expires 1913
H. H. RUSBY, Newark, N. J.....	Term expires 1913
E. G. EBERLE, Dallas, Tex.....	Term expires 1914
GEORGE F. PAYNE, Atlanta, Ga.....	Term expires 1914
JAMES M. GOOD, St. Louis, Mo.....	Term expires 1914

(Elected by Local Branches.)

LEWIS C. HOPP, Northern Ohio Branch, Cleveland.....	Term expires 1911
E. H. LAPIERRE, New England Branch, Cambridge, Mass.....	Term expires 1912
JOHN B. THOMAS, Baltimore Branch, Baltimore.....	Term expires 1912
F. J. WULLING, Northwestern Branch, Minneapolis.....	Term expires 1912
WILLIAM R. WHITE, Nashville Branch, Nashville.....	Term expires 1912
AMBROSE HUNSBERGER, Philadelphia Branch, Philadelphia, Pa.....	Term expires 1912
J. A. KOCH, Pittsburgh Branch, Pittsburgh.....	Term expires 1914
PHILIP ASHER, New Orleans Branch, New Orleans.....	Term expires 1914
JOHN A. MARTIN, Denver Branch, Denver.....	Term expires 1914
HENRY B. FLOYD, City of Washington Branch, Washington D. C.....	Term expires 1914
THOMAS D. McELHENIE, New York Branch.....	Term expires 1915
ALBERT H. CLARK, Chicago Branch.....	Term expires 1915
WILLIAM K. ILHARDT, St. Louis Branch.....	Term expires 1915

(Members Ex-Officio.)

The President, Vice Presidents, General Secretary, Treasurer, Reporter on the Progress of Pharmacy, Secretary of the Council, Local Secretary, Historian, and the Chairmen of the Sections.

COMMITTEES OF THE COUNCIL.

COMMITTEE ON FINANCE.

(Elected by the Council.)

J. A. KOCH, *Chairman*.
 OTTO F. CLAUS.

E. H. LAPIERRE.

* Deceased.

COMMITTEE ON PUBLICATION.

(Elected by the Council.)

J. W. ENGLAND, *Chairman.*

F. J. WULLING.

G. M. BERINGER.

J. L. LEMBERGER.

F. W. MEISSNER, JR.

The Editor, Associate Editors, and Treasurer, *ex-officio*.**COMMITTEE ON CENTENNIAL FUND.**

(Elected by the Council.)

JOHN G. GODDING, *Chairman.*

J. A. KOCH.

JAMES H. BEAL.

AUDITING COMMITTEE.

(Appointed by the Chairman of the Council.)

OTTO F. CLAUS, *Chairman.*

SOLOMON BOEHM.

FRANCIS HFMM.

COMMITTEE ON INVESTED AND TRUST FUNDS.

(Appointed by the Chairman of the Council.)

JAMES H. BEAL.

THOMAS P. COOK.

E. G. EBERLE.

H. M. WHELPLEY, *ex-officio*.**COMMITTEE ON MEMBERSHIP.**

JOHN C. WALLACE.

LEWIS C. HOPP.

CHARLES M. FORD.

WILLIAM O. RICHTMANN.

OTTO RAUBENHEIMER.

CHARLES E. CASPARI.

WILLIAM R. WHITE.

J. W. ENGLAND, *Secretary*.**COMMITTEE ON TRANSPORTATION.**

(Elected by the Council.)

CASWELL A. MAYO, *Chairman.*

CHARLES B. WHILDEN.

WILHELM BODEMANN.

F. C. GODBOLD.

H. M. WHELPLEY.

W. S. ELKINS, JR.

CHARLES G. MERRELL.

W. A. HOVER.

F. J. WULLING.

C. HERBERT PACKARD.

CHAS. CASPARI, JR.

L. C. HOPP.

OFFICERS OF THE SECTIONS.

(Elected by the several Sections.)

SECTION ON SCIENTIFIC PAPERS.*Chairman*—W. O. RICHTMANN, Satsuma Heights, Fla.*Secretary*—CHARLES H. LAWALL, 39 S. 10th St., Philadelphia, Pa.*Associate*—F. R. ELDRED, 3323 Kenwood Ave., Indianapolis, Ind.**SECTION ON EDUCATION AND LEGISLATION.***Chairman*—JOHN C. WALLACE, 61 E. Washington St., New Castle, Pa.*Secretary*—WILBER J. TEETERS, Iowa City, Ia.*Associates* { H. D. KNISELEY, Checotah, Okla.

{ PHILIP ASHER, 1606 St. Charles Ave., New Orleans, La.

{ L. D. HAVENHILL, Lawrence, Kan.

SECTION ON PRACTICAL PHARMACY AND DISPENSING*Chairman*—P. HENRY UTECH, 209 Chestnut St., Meadville, Pa.*Secretary*—J. LEON LASCOFF, Lexington and 83d St., New York.*Associate*—W. H. GLOVER, Lawrence, Mass.**SECTION ON COMMERCIAL INTERESTS.***Chairman*—ERNEST BERGER, Tampa, Fla.*Secretary*—R. W. RAMSAUR, Palatka, Fla.*Associates* { B. E. PRITCHARD, 1211 Bessemer Bldg., Pittsburgh, Pa.

{ LOUIS BERGER, 470 Lenox Ave., New York.

{ FRANK H. CARTER, 776 Massachusetts Ave., Indianapolis, Ind.

SECTION ON HISTORICAL PHARMACY.

Chairman—OTTO RAUBENHEIMER, 1341 Fulton St., Brooklyn, N. Y.*Secretary*—CASWELL A. MAYO, 62 W. Broadway, New York.*Historian*—EDWARD KREMERS, Madison, Wis.

OFFICERS OF THE LOCAL BRANCHES, 1911-1912.

(The General Secretary should have prompt notice of corrections and changes.)

CHICAGO BRANCH.

President—J. H. WELLS.*Second Vice President*—WILLIAM GRAY.*First Vice President*—S. K. SAAS.*Third Vice President*—MRS. M. M. GRAY.*Secretary-Treasurer*—W. B. DAY.*Committee Chairmen.**Practical Pharmacy*—J. A. BECKER.*Publicity*—OTTO BRUDER.*Medical Relations*—BERNARD FANTUS.*Legislation*—J. P. CROWLEY.*Council Representative*—A. H. CLARK.

NORTHERN OHIO BRANCH.

President—L. C. HOPP.*Vice President*—W. T. HANKEY.*Secretary-Treasurer*—T. BERNARD TANNER.

PHILADELPHIA BRANCH.

President—F. E. STEWART.*Treasurer*—WILLIAM MCINTYRE.*First Vice President*—SAMUEL C. HENRY.*Secretary*—AMBROSE HUNSBERGER.*Second Vice President*—E. FULLERTON COOK.*Council Representative*—ROBERT C. CADMIUS.*Committee Chairmen.**Practical Pharmacy*—PAUL L. MCCONOMY.*Professional Relations*—FRANK E. MORGAN.*Membership*—OTTO KRAUS.

PHILADELPHIA BRANCH.

(Scientific Section.)

President—C. H. KIMBERLY.*Secretary*—F. P. STROUP.

PITTSBURG BRANCH.

President—ANDREW CAMPBELL.*Third Vice President*—LEONARD K. DARBAKER.*First Vice President*—LOUIS SAALBACH.*Secretary*—B. E. PRITCHARD.*Second Vice President*—PETER G. WALTER.*Treasurer*—P. HENRY UTECH.*Committee Chairmen.**Membership*—CHARLES E. WILLETS.*Medical Relations*—GEORGE W. KUTSCHER.*Practice*—FREDERICK J. BLUMENSCHIN.*Education and Legislation*—JAMES H. BEAL.

CITY OF WASHINGTON BRANCH.

President—LEWIS FLEMER.*Secretary and Council Member*—HENRY B.*First Vice President*—LYMAN F. KEBLER.

FLOYD.

Second V. P.—HENRY E. KALUSOWSKI.*Treasurer*—WYMOND H. BRADBURY.*Committee Chairmen.**Membership*—HERBERT C. EASTERDAY.*Medical Relations*—FRANK C. HENRY.*Legislation*—WILLIARD S. RICHARDSON.*Scientific Communications*—RODNEY H. TRUE.*Publicity*—MARTIN J. WILBERT.

NEW ENGLAND BRANCH.

President—CHARLES F. NIXON.*Vice President*—ALBERT W. MESERVE.*Secretary-Treasurer*—R. ALBRO NEWTON.*Committee Chairmen.**Professional Relations*—FRANK F. ERNST.*Membership*—WILLIAM H. GLOVER.

BALTIMORE BRANCH.

President—E. F. KELLY.

Vice President—W. M. FOUCH.

Secretary-Treasurer—E. W. HODSON.

Committee Chairmen.

Membership—H. A. B. DUNNING.

Science and Practice—H. P. HYNSON.

Professional Relations—J. F. HANCOCK

Education and Legislation—J. E. HANCOCK.

DENVER BRANCH.

President—JOHN BEST

Second Vice President—C. H. SKINNER

First Vice President—L. B. BRIDGHAM.

Secretary-Treasurer—F. W. NITARDY

NEW YORK BRANCH.

President—GEO. C. DIEKMAN.

Vice President—C. D. BIGELOW.

Treasurer—JOSEPH WEINSTEIN.

Secretary—HUGH CRAIG.

Committee Chairmen.

Progress of Pharmacy—OTTO RAUBENHEIMER.

Professional Relations—J. LEON LASCOFF.

Education and Legislation—THOS. P. COOK.

Membership—CASWELL A. MAYO.

NASHVILLE BRANCH.

President—J. O. BURGE.

Second Vice President—D. J. KOTEN

First Vice President—E. A. RUDDIMAN.

Treasurer—C. C. YOUNG.

Secretary—WILLIAM R. WHITE.

Committee Chairmen.

Membership—C. C. YOUNG.

Legislation—IRA B. CLARK.

Trade Interests—M. E. HUTTON.

National Formulary—R. L. EVANS.

NORTHWESTERN BRANCH.

President—STEWART GAMMEL.

Secretary-Treasurer—EDWIN L. NEWCOMB.

GENERAL COMMITTEES.

(Appointed by the President.)

COMMITTEE ON U. S. P.

H. A. B. DUNNING.....	Term expires 1912	L. D. HAVENHILL, Chm....	Term expires 1917
CHARLES E. CASPARI.....	Term expires 1913	L. F. KEBLER.....	Term expires 1918
A. B. LYONS.....	Term expires 1914	HARVEY A. SELL.....	Term expires 1919
WILLIAM MITTELBACH.....	Term expires 1915	E. FULLERTON COOK.....	Term expires 1920
REID HUNT.....	Term expires 1916	E. H. LAPIERRE.....	Term expires 1921

BOARD OF CANVASSERS.

WILLIAM A. FROST, *Chairman*, St. Paul, Minn.

TRUMAN GRIFFEN.....Minneapolis, Minn.

ALBERT D. THOMPSON.....Minneapolis, Minn.

COMMITTEE ON UNOFFICIAL STANDARDS.

(Elected by the Council.)

HENRY KRAEMER, 424 S. 4th St., Philadelphia.....	Term expires 1912
EUSTACE H. GANE, 91 Fulton St., New York.....	Term expires 1912
B. L. MURRAY, Care Merck & Co., New York.....	Term expires 1912
W. A. PUCKNER, 535 Dearborn Ave., Chicago.....	Term expires 1912
OTTO RAUBENHEIMER, 1341 Fulton St., Brooklyn.....	Term expires 1913
GEORGE D. ROSENGARTEN, P. O. Box 1625, Philadelphia.....	Term expires 1913
CHARLES E. VANDERKLEED, 200 1st Ave., Collingswood, N. J.....	Term expires 1913
M. I. WILBERT, 728 20th St., N. W., Washington, D. C.....	Term expires 1913
GEORGE M. BERINGER, (<i>Chairman</i>), 501 Federal St., Camden, N. J.....	Term expires 1914
H. H. RUSBY, 776 De Graw Ave., Newark, N. J.....	Term expires 1914
F. R. ELDRED, 3323 Kenwood Ave., Indianapolis.....	Term expires 1914
JOHN M. FRANCIS, 240 Seyburn Ave., Detroit.....	Term expires 1914
J. A. KOCH, Bluff and Pride Sts., Pittsburgh.....	Term expires 1915
THOMAS P. COOK, 114 William St., New York.....	Term expires 1915
L. D. HAVENHILL, Lawrence, Kan.....	Term expires 1915
E. L. NEWCOMB, 527 5th Ave., S. E., Minneapolis.....	Term expires 1915

COMMITTEE ON THE NATIONAL FORMULARY.

(Elected by the Council.)

C. LEWIS DIEHL, <i>Chairman</i>	Louisville, Ky.	H. A. B. DUNNING.....	Baltimore, Md.
CLYDE M. SNOW.....	Chicago, Ill.	SAMUEL L. HILTON.....	Washington, D. C.
A. B. STEVENS.....	Ann Arbor, Mich.	CHAS. H. LA WALL.....	Philadelphia, Pa.
OTTO RAUBENHEIMER.....	Brooklyn, N. Y.	GEO. M. BERINGER.....	Camden, N. J.
LEONARD A. SELTZER.....	Detroit, Mich.	M. I. WILBERT.....	Washington, D. C.
HARRY V. ARNY.....	New York	W. L. SCOVILLE.....	Detroit, Mich.
E. FULLERTON COOK.....	Philadelphia, Pa.	WILLIAM A. HALL.....	Detroit, Mich.
ADAM WIRTH.....	New Orleans, La.		

PHARMACEUTICAL SYLLABUS.

(Appointed by the President.)

CHARLES CASPARI, JR., 6 E. Franklin St., Baltimore.....	Term expires 1912
E. G. EBERLE, 1804 Jackson St., Dallas, Tex.....	Term expires 1913
HARRY B. MASON, P. O. Box 484, Detroit.....	Term expires 1914
GEORGE M. BERINGER, 501 Federal St., Camden, N. J.....	Term expires 1915
WILLIAM B. DAY, Michigan Blvd., and 12th St., Chicago.....	Term expires 1916
WILLIS B. GREGORY, 530 Main St., Buffalo.....	Term expires 1917
HENRY L. TAYLOR, 2 Woodlawn Ave., Albany, N. Y.....	Term expires 1918

COMMITTEE ON TIME AND PLACE OF NEXT MEETING.

(Appointed by the President.)

J. O. BURGE, <i>Chairman</i>	Nashville	F. C. GODBOLD.....	New Orleans
GEORGE B. KAUFFMAN.....	Columbus, O.	THOMAS F. MAIN.....	New York
J. C. BURTON.....	Stroud, Okla.		

COMMITTEE ON NATIONAL LEGISLATION.

(Appointed by the President.)

W. S. RICHARDSON, <i>Chm.</i>	Washington, D. C.	F. A. HUBBARD.....	Boston, Mass.
JOHN C. WALLACE.....	New Castle, Pa.	E. G. EBERLE.....	Dallas, Tex.
CHRISTOPHER KOCH.....	Philadelphia, Pa.		

SPECIAL COMMITTEES.

(Appointed by the President.)

ON STATUS OF PHARMACISTS IN GOVERNMENT SERVICE.

GEORGE F. PAYNE, <i>Chairman</i>	Atlanta	W. R. WHITE.....	Nashville
H. H. RUSBY.....	Newark	W. B. DAY.....	Chicago
OTTO RAUBENHEIMER.....	Brooklyn		

WILLIAM PROCTER MEMORIAL FUND.

J. F. HANCOCK, <i>Chairman</i>	Baltimore	F. C. RYAN.....	Detroit
CHARLES CASPARI, JR.....	Baltimore	THOMAS F. MAIN.....	New York
A. R. L. DOHME.....	Baltimore	PARKER C. COOK.....	Baltimore
B. F. FAIRCHILD.....	New York	J. K. LILLY.....	Indianapolis
CASWELL A. MAYO.....	New York	H. S. WELLCOME.....	London, Eng.
E. G. EBERLE.....	Dallas	GEORGE MERRELL.....	Cincinnati
J. L. LENGFELD.....	San Francisco	JOSE P. ALACAN.....	Havana, Cuba
C. M. FORD.....	Denver	WILLIAM B. DAY.....	Chicago
CLEMENT B. LOWE.....	Philadelphia	E. L. PATCH.....	Boston
HENRY KRAEMER.....	Philadelphia	LEWIS C. HOPP.....	Cleveland

ON REVISION OF THE CONSTITUTION AND BY-LAWS.

J. W. ENGLAND, <i>Chairman</i>	Philadelphia	J. H. BEAL.....	Scio
H. M. WHELPLEY.....	St. Louis	G. M. BERINGER.....	Camden
J. C. WALLACE.....	New Castle, Pa.		

ON PATENTS AND TRADE MARKS.

F. E. STEWART, <i>Chairman</i>	Philadelphia	SOLOMON BOEHM.....	St. Louis
S. L. HILTON.....	Washington, D. C.	L. G. BLAKESLEE.....	St. Louis
L. W. GRIFFIN.....	Boston		

INTERNATIONAL COMMITTEE ON PHARMACEUTICAL NOMENCLATURE.

CASWELL A. MAYO, <i>Chairman</i>.....New York	H. M. WHELPLEY.....St. Louis
JOSEPH P. REMINGTON.....Philadelphia	G. M. BERINGER.....Camden
E. O. ENGSTROM.....Pittsfield	

ON DRUG REFORM.

L. E. SAYRE, <i>Chairman</i>.....Lawrence, Kan.	ALBERT SCHNEIDER.....San Francisco
E. V. HOWELL.....Chapel Hill	

ON WEIGHTS AND MEASURES.

GEORGE C. DIEKMAN, <i>Chairman</i> ...New York	C. W. JOHNSON.....Seattle
A. H. CLARK.....Chicago	PHILIP ASHER.....New Orleans
GEORGE A. GORGAS.....Harrisburg	

DELEGATES TO A. M. A. SECTION ON PHARMACOLOGY.

J. P. REMINGTON, <i>Chairman</i>.....Philadelphia	L. F. KEBLER.....Washington, D. C.
H. M. WHELPLEY.....St. Louis	G. M. BERINGER.....Camden
J. H. BEAL.....Scio	OTTO RAUBENHEIMER.....Brooklyn
H. H. RUSBY.....Newark, N. J.	THEO. J. BRADLEY.....Albany
I. V. S. STANISLAUS.....Philadelphia	GEORGE E. NORTON.....Cambridge

DELEGATES TO N. W. D. A.

THOMAS P. COOK, <i>Chairman</i>.....New York	THEO. F. MEYER.....St. Louis
FRED L. CARTER.....Boston, Mass.	HOWARD BREWER.....Worcester, Mass.
J. H. BEAL.....Scio, O.	

DELEGATES TO N. A. R. D.

H. B. GUILFORD, <i>Chairman</i> .	W. BODEMAN.
SIMON N. JONES	W. C. ANDERSON.
	FRANK H. FREERICKS.

ON PHYSIOLOGICAL TESTING.

E. M. HOUGHTON, <i>Chairman</i>	130 Longfellow Ave., Detroit
H. C. WOOD, JR.....	434 S. 44th St., Philadelphia
CHARLES R. ECKLER.....	432 E. St. Clair St., Indianapolis
W. A. PEARSON.....	35 Poplar St., Philadelphia
WILLIAM WORTH HALE.....	1495 Newton St. N. W., Washington, D. C.

COMMITTEE ON EDITING RULES.

(Appointed by the President.)

FRANCIS B. HAYS, <i>Chairman</i>.....New York	HARRY B. MASON.....Detroit
EZRA J. KENNEDY.....New York	HUGO KANTROWITZ.....New York

COMMITTEE ON INTERNATIONAL CONGRESS OF PHARMACY.

(Appointed by the President.)

JOS. P. REMINGTON, <i>Chairman</i> ...Philadelphia	ALBERT SCHNEIDER.....San Francisco
EUGENE G. EBERLE.....	Dallas, Tex.

COMMITTEE ON ORGANIZATION OF LOCAL BRANCHES.

(Appointed by the President.)

THEO. D. WETTERSTROEM, <i>Chmn</i> ...Cincinnati	JOSEPH LENGFELD.....San Francisco
GEO. B. KAUFFMAN.....Columbus, O.	OTTO CLAUS.....St. Louis
CHARLES W. JOHNSON.....	Seattle

COMMITTEE ON DRUG MARKET.

(Appointed by the Chairman of the Scientific Section.)

EDGAR L. PATCH, <i>Chairman</i> .	L. F. KEBLER.
W. L. SCOWILLE.	H. H. RUSBY.

GENERAL MEMBERSHIP COMMITTEE, 1911-1912.

WILLIAM B. DAY, *Chairman*, 74 East 12th St., Chicago.

- Ala.—W. E. BINGHAM, Tuscaloosa.
JAMES C. VANANTWERP, Mobile.
- Ariz.—HARRY BRISLEY, Prescott.
R. P. H. ROZIENE, Phoenix.
- Ark.—W. L. DEWOODY, Pine Bluff.
F. SCHACHLEITER, Hot Springs.
Miss M. A. FEIN, Little Rock.
- Calif.—ALBERT SCHNEIDER, San Francisco.
CHARLES B. WHILDEN, San Francisco.
GEORGE H. P. LICHTHARDT, Sacramento.
THOMAS W. JONES, Los Angeles.
J. G. MUNSON, San Jose.
- Colo.—S. L. BRESLER, Denver.
FRED W. NITARDY, Denver.
E. L. SCHOLTZ, Denver.
- Conn.—CHARLES A. RAPELYE, Hartford.
JOHN B. EBBS, Waterbury.
- D. C.—W. S. RICHARDSON, Washington.
M. I. WILBERT, Washington.
- Del.—H. K. WATSON, Wilmington.
E. A. TRUITT, Middleton.
- Fla.—J. M. DIXON, Jacksonville.
ERNEST BERGER, Tampa.
- Ga.—WILLIAM S. ELKINS, Atlanta.
MAX MORRIS, Macon.
- Ida.—CLARENCE O. BALLOU, Boise.
H. M. SKEELS, Twin Falls.
- Ill.—C. H. AVERY, Chicago.
GEORGE W. SOHRBECK, Moline.
WILHELM BODEMANN, Chicago.
W. B. DAY, Chicago.
- Ind.—FRANK H. CARTER, Indianapolis.
F. S. HERETH, Indianapolis.
W. H. RUDDER, Salem.
F. W. MEISSNER, JR., La Porte.
- Iowa—WILBER J. TEETERS, Iowa City.
G. SCHERLING, Sioux City.
- Kan.—LUCIUS E. SAYRE, Lawrence.
MATTHIAS NOLL, Atchison.
- Ky.—JOHN W. GAYLE, Frankfort.
C. LEWIS DIEHL, Louisville.
- La.—FABIUS C. GODBOLD, New Orleans.
M. T. BRESLIN, New Orleans.
PHILIP ASHER, New Orleans.
- Me.—ALFRED P. COOK, Portland.
M. L. PORTER, Danforth.
C. H. DAVIS, Bangor.
- Md.—H. A. B. DUNNING, Baltimore.
EVANDER F. KELLY, Baltimore.
H. L. MEREDITH, Hagerstown.
- Mass.—C. HERBERT PACKARD, Boston.
E. H. LAPIERRE, Cambridge.
JAMES F. GUERIN, Worcester.
WILLIAM H. GLOVER, Lawrence.
- Mich.—WILLIAM A. HALL, Detroit.
LEONARD A. SELTZER, Detroit.
J. O. SCHLOTTERBECK, Ann Arbor.
W. C. KIRCHGESSNER, Grand Rapids.
- Minn.—F. J. WULLING, Minneapolis.
ALBERT D. THOMPSON, Minneapolis.
W. A. FROST, St. Paul.
CHARLES T. HELLER, St. Paul.
- Miss.—OSCAR W. BETHEA, Meridian.
A. S. CODY, Osyka.
- Mo.—H. M. WHELPLEY, St. Louis.
OTTO H. CLAUS, St. Louis.
W. MITTELBACH, Booneville.
CHARLES E. ZINN, Kansas City.
J. G. WIRTHMANN, Kansas City.
- Mont.—HOWARD ROCKEFELLER, Butte.
LEE WARREN, Billings.
- Neb.—CHARLES R. SHERMAN, Omaha.
AUTUMN V. PEASE, Fairbury.
- Nev.—JOSEPH M. TABER, Elko.
- N. H.—WILLIAM D. GRACE, Portsmouth.
HERBERT E. RICE, Nashua.
- N. J.—GEORGE M. BERINGER, Camden.
CHARLES HOLZHAUER, Newark.
H. A. JORDAN, Bridgeton.
- N. Y.—GEORGE C. DEIKMAN, New York City.
JOSEPH WEINSTEIN, New York City.
CASWELL A. MAYO, New York City.
W. C. ALPERS, New York City.
OTTO RAUBENHEIMER, Brooklyn.
ALBERT M. ROEHRIG, Buffalo.
WARREN L. BRADT, Albany.
- N. C.—E. V. ZOELLER, Tarboro.
E. V. HOWELL, Chapel Hill.
- N. D.—H. L. HAUSSMEN, Grafton.
W. S. PARKER, Lisbon.
- New Mexico—B. C. RUPPE, Albuquerque.
- Ohio—LEWIS C. HOPP, Cleveland.
J. H. BEAL, Scio.
THEO. D. WETTERSTROEM, Cincinnati.
GEORGE B. KAUFFMAN, Columbus.
- Okla.—FORESS B. LILLIE, Guthrie.
H. D. KNISELEY, Checotah.
- Ore.—JOHN A. LAUE, Portland.
G. C. BLAKELEY, The Dalles.
- Pa.—JOSEPH W. ENGLAND, Philadelphia.
W. L. CLIFFE, Philadelphia.
W. MCINTYRE, Philadelphia.
E. FULLERTON COOK, Philadelphia.
JULIUS A. KOCH, Pittsburg.
- R. I.—W. O. BLANDING, Providence.
JAMES O'HARE, Providence.
- S. C.—G. W. EVANS, Anderson.
- S. D.—IRWIN A. KEITH, Lake Preston.
E. C. BENT, Dell Rapids.
- Tenn.—JOHN T. MCGILL, Nashville.
WILLIAM R. WHITE, Nashville.
F. W. MAYO, Memphis.
- Tex.—JACOB SCHRODT, Dallas.
ROBERT H. WALKER, Gonzales.
R. H. NEEDHAM, Fort Worth.
- Utah—F. A. DRUEHL, Salt Lake City.
OTTO R. PETERS, Salt Lake City.
- Vt.—E. W. GILMAN, Marshfield.
W. E. TERRILL, Montpelier.
W. H. ZOTTMAN, Burlington.

Va.—CHARLES B. FLEET, Lynchburg.
T. A. MILLER, Richmond.

Wash.—C. W. JOHNSON, Seattle.
CORNELIUS OSSEWARD, Seattle.
P. JENSEN, Tacoma.

W. Va.—JOHN COLEMAN, Wheeling.
GEORGE O. YOUNG, Buckhannon.

Wis.—EDWARD WILLIAMS, Madison.
EDWARD HEBBARD, La Crosse.
HENRY Z. RUENZEL, Milwaukee.

Wyo.—ARTHUR NEVILLE, Fort Mackenzie.

Hawaiian Islands—
SAMUEL LOUIS RUMSEY, Honolulu.

Province of Manitoba—
H. E. J. BLETCHER, Winnipeg.

Province of New Brunswick—
M. V. PADDOCK, St. John.

Province of Nova Scotia—
F. C. STIMSON, Halifax.

Province of Ontario—
C. F. HEEBNER, Toronto.

Province of Quebec—
J. E. MORRISON, Montreal.

Cuba—JOSE GUILLERMO DIAZ, Havana.
JOSE P. ALACAN, Havana.

Alaska—GUY L. SMITH, Douglas.

Philippine Islands—
NEWTON C. COMFORT, Manila.

Porto Rico—FRED C. BAUM, San Juan.

NATIONAL ASSOCIATIONS OF BOARDS OF PHARMACY

OFFICERS FOR 1911-1912.

R. H. WALKER, *President*,Gonzales, Tex. H. L. HAUSSAMAN, *2d V. Pres.*, Grafton, N. D.
D. F. DAVIS, *First Vice President*, Barre, Vt. L. C. LEWIS, *3d Vice Pres.*, Tuskegee, Ala.
A. F. SALA, *Secretary-Treasurer*, Winchester, Ind.

Executive Committee.

J. B. BOND, *Sr.*, *Chmn.*, 1912, Little Rock, Ark. C. E. ZINN, 1911,Kansas City, Mo.
T. A. MILLER, 1913,Richmond, Va. R. H. WALKER, *ex-officio*; A. F. SALA, *ex-officio*

Syllabus Committee.

W. H. RUDDER, seven years,Salem, Ind. CHARLES GEITNER, four years,St. Louis, Mo.
E. O. ENGSTROM, six years,Pittsfield, Mass. CHAS. T. HELLER, three years,St. Paul, Minn.
S. L. HILTON, five years,Washington, D. C. D. F. JONES, two years,Watertown, S. D.
C. O. BIGLOW, one year,New York City.

Questions and Methods Committee.

H. L. HAUSSAMAN, *Chmn.*,Grafton, N. D. C. N. AVERY,Chicago, Ill.
WM. C. POWELL,Snow Hill, Md. F. W. BUCKNAM,Skowhegan, Me.

Legislation Committee.

J. C. BURTON, *Chairman*,Stroud, Okla. A. J. FISCHER,Santa Fe, N. M.
ED. J. ROGERS,Port Huron, Mich. C. O. BALLOU,Boise, Idaho
F. W. WARR,Memphis, Tenn.

Committee to Arrange Reciprocal Interchange with Cuba.

F. BERGER, *Chairman*,Tampa, Fla. J. F. DOWDY,Little Rock, Ark.
H. L. HAUSSAMAN,Grafton, N. D.

Publication Committee.

S. L. BRISTER,Denver, Colo.

AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

President, J. O. SCHLOTTERBECH,
Ann Arbor, Mich.
Vice President, A. H. CLARK,Chicago, Ill.
Sec.-Treas., CHAS. W. JOHNSON, Seattle, Wash.

Executive Committee—

J. A. KOCH, *Chairman*,Pittsburgh, Pa.
E. J. EBERLE,Dallas, Texas
E. H. LA PIERRE,Boston, Mass.
J. M. GOOD,St. Louis, Mo.
W. J. TETTERS,Iowa City, Iowa

Members on National Syllabus Committee.

C. B. LOWE,Term ends 1912 J. A. SCHLOTTERBECH,Term ends 1915
W. C. ANDERSON,Term ends 1913 H. H. RUSBY,Term ends 1916
J. A. KOCH,Term ends 1914 J. H. BEAL,Term ends 1917
C. W. JOHNSON,Term ends 1918

*The
Merrell
Idea*

Keep up the Quality
Keep down the Price

To specify Merrell on your orders is to grasp opportunity by the hand and profit by the Quality and Price Selling Plan introduced by the Merrell Company in 1912.

This pharmacal evolution means better values, increased profits, and improved business conditions for the retail druggist.

We cannot tell you all about it here, but if you examine our catalogue and compare our prices, you will not miss an opportunity to specify Merrell and insist on getting this high-class line at a saving of ten percent.



**The Wm. S. Merrell Chemical Company,
CINCINNATI.**

¶ Have you our 1912 Price Current?
If not, mail this coupon to secure a
copy and full explanation of our
Selling Plan.

Mail This Coupon
THE WM. S. MERRELL CHEMICAL COMPANY, CINCINNATI, OHIO.
Please send your 1912 Price List and Selling Plan to

5233

NEW YORK DEPOT—The Chas. N. Crittenton Co., 115 Fulton St.

CHICAGO DEPOT—Morrison, Plummer & Co., 217-222 Washington St.

OUR SPECIALTY

QUALITY AND PRICE

¶ It is simply impossible to buy better Fire Insurance. We offer the very best. Reliability, safety and honesty are the foundation of our business.

¶ Our price is right. We save you 25 per cent in the cost of your fire insurance.

¶ A druggist who does not carry at least a part of his insurance with us, is making a mistake. Write, and we will prove it to you. We are drug store insurance specialists. A Capital Stock not a Mutual Company. Our Surplus for policyholders is nearly \$300,000.00. We have representatives in 31 states, and are under the supervision of 31 State Insurance Departments. We write insurance only on the property of retail druggists and only in fire protected towns.

ADDRESS

The American Druggists Fire Ins. Co.

1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

LIBRARY
FEB 18 2002
UNIVERSITY OF MICHIGAN

The Journal of the American Pharmaceutical Association

Volume I

JULY, 1912

No. 7

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE DENVER CONVENTION AND AFTER.

IN previous numbers of the JOURNAL, frequent references have been made to the sixtieth annual convention of the American Pharmaceutical Association at Denver, August 16-24, 1912. The June issue contained the preliminary report of the Committee on Transportation on railroad routes and rates from Atlantic and Pacific coast cities respectively, a tentative program of the various sessions, and a list of entertainments provided by Denver druggists and citizens. Headquarters will be at the Brown Palace Hotel, the same hotel which was the abiding place of the Association at its Denver meeting seventeen years ago. Other hotels charging moderate rates are within convenient walking distance of headquarters.

In the early days of pharmaceutical associations, the annual meetings represented most of their activities, and between conventions the associations had only a paper existence, represented by the annual volume of proceedings, containing the constitution



Brown Palace Hotel.

and by-laws and roll of members. Such a sporadic existence, however, does not meet the enlarged demands of present-day pharmacy and consequently the more progressive associations have undertaken enterprises which make them active throughout the year. This is especially true in the case of the A. Ph. A., and was the principal cause which led to the establishment of THE JOURNAL. Throughout the year its various committees and officers are actively at work upon the subjects committed to their charge, so that the annual convention is now rather the settling-up period, or the occasion when the officers and committees make their final reports upon the work of the year and receive their instruction for the activities of the year to follow. It also represents the Grand Council of Pharmacy, when the representatives of all branches of pharmaceutical workers, retailers, manufac-



Four-Mile Canyon and the Ward Line.

turers, boards of pharmacy, etc., come together for consultation upon their various lines of work, and also for the consideration of questions involving the relations of the different branches of pharmacy to each other.

It would be difficult to describe the nature of these meetings so that their value would be fully appreciated by those who have never attended them, while for those who are in the habit of attending, no description is needed.

The bulk of each convention is composed of those who have attended year after year for many years, no matter where the conventions are held. Certainly they believe they are profited, or they would not attend so faithfully.

To select a meeting place which shall be equally agreeable to members scattered from the Philippines to the Hawaiian Islands, and from British Columbia

to the West Indies, is of course, impossible. The Association has not only to consider the residence of the majority of its membership, but also the pharmaceutical needs of the various parts of the country. The holding of an annual convention is always marked by a revival of pharmaceutical interests in the section visited, and by the creation of enthusiasm that persists for years afterwards. These were the considerations which led to the selection of Denver for the 1912 assembly. This beautiful city is the natural gateway to the cluster of states embraced in the Rocky Mountain regions and is a center of pharmaceutical interests as well as of general culture and commerce.



The Great Snowy Range.

The program of the general sessions and section meetings has been amended in accordance with suggestions received from section officers and others and now stands as follows:

REVISED PROGRAM FOR THE SIXTIETH ANNUAL MEETING OF THE
PHARMACEUTICAL ASSOCIATION.

Denver, Col., August 19-24, 1912.

(Headquarters, Brown Palace Hotel.)

Monday, August 19—

9:00 A. M. Meeting of the Council.

10:00 A. M. Meeting of the National Association of Boards of Pharmacy.

Monday, August 19—

3:00 P. M. First General Session.

(The Nominating Committee will meet immediately after the adjournment of the First General Session.)

9:00 P. M. President's Reception.

Tuesday, August 20—

9:00 A. M. Meeting of the Council.

10:00 A. M. Second General Session.

3:00 P. M. Section on Commercial Interests.

3:00 P. M. Section on Scientific Papers.

8:00 P. M. Section on Commercial Interests (Second Session).

8:00 P. M. Meeting of the Conference of Pharmaceutical Faculties.



Two Rounds of the Giant's Ladder.

Wednesday, August 21—

9:00 A. M. Meeting of the Council.

10:00 A. M. Section on Education and Legislation.

3:00 P. M. Section on Practical Pharmacy and Dispensing.

6:30 P. M. Separate Reunions of College Alumni.

8:00 P. M. Section on Education and Legislation (Second Session.)

9:30 P. M. Smoker.

Thursday, August 22—

9:00 A. M. Meeting of the Council (Organization of the Council for 1912-1913).

Thursday, August 22—

- 10:00 A. M. Meeting of the Conference of Pharmaceutical Faculties (Second Session).
- 10:00 A. M. Section on Scientific Papers (Second Session).
- 3:00 P. M. Section on Scientific Papers (Third Session).
- 3:00 P. M. Section on Practical Pharmacy and Dispensing (Second Session).
- 8:00 P. M. Joint Session of Boards of Pharmacy and Section on Education and Legislation.
- 8:00 P. M. Section on Historical Pharmacy.



The Parting of the Ways.

Friday, August 23—

- 8:00 A. M. Mountain Excursion to Glacier Lake, visiting en route the University of Colorado and Boulder. Chautauqua Entertainment by the Citizens of Boulder. Returning to Denver at 6:00 p. m.
- 8:00 P. M. Section on Historical Pharmacy (Second Session).

Saturday, August 24—

- 9:00 A. M. Meeting of the Council.
- 10:00 A. M. Final General Session.

In the arrangement of the above program, it is believed that sufficient provision has been made for the successful discharge of the work which the convention will have to do. The hospitable spirit of the Denver drug trade is such that it has had to be restrained rather than encouraged in providing entertainments for the hours not occupied by business. A sufficient number of diversions have been

authorized, however, to fully occupy the time of the members between sessions. The special entertainments provided for the ladies are as follows:

PROGRAM OF SPECIAL ENTERTAINMENTS FOR LADIES ATTENDING THE SIXTIETH ANNUAL CONVENTION.

Tuesday, August 20—

9:00 A. M. Fifty-mile trolley ride, visiting the foothills about Denver.

8:00 P. M. Concert and moving pictures by E. C. Fine, of Boulder.

Wednesday, August 21—

9:00 A. M. Seeing Denver in Automobiles.

2:00 P. M. Matinee at Elitch's Gardens.

Battle of the Monitor and Merrimac.

Zoological Gardens.

8:00 P. M. Toast Banquet tendered by the ladies of the Denver State Pharmaceutical Association.

Thursday, August 22—

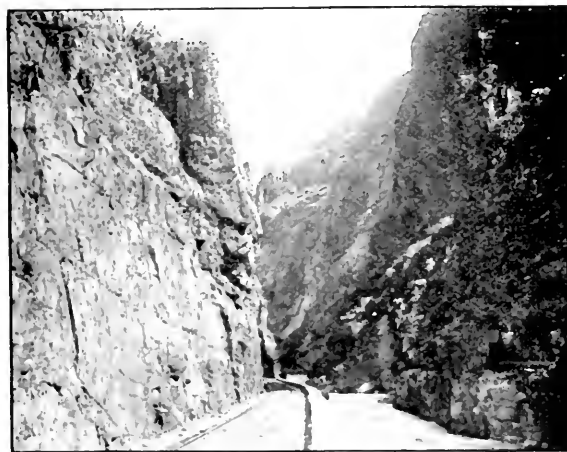
9:00 A. M. Autos.

3:00 P. M. Card Party at Brown Palace.

THE GLACIER LAKE TRIP.

This has been set for Friday of the convention week, and is one of the entertainments provided by the Denver druggists for the entire membership. The excursion will be over the Denver Boulder and Western Railroad, along the famous

"Switzerland trail of America." In three hours' time the train traverses a distance of fifty miles through the region where sky and mountain meet, passing around the craters of extinct volcanoes to the "Crest of the Continent," yielding a continuous panorama of mountain peaks and snow-clad ranges that is probably not surpassed in any other region of Colorado. The cuts representing the Four-mile Canyon and the



The Royal Gorge of the Arkansas.

Ward Line, the Great Snowy Range, two Rounds of the Giant's Ladder, Parting of the Ways, and Glacier Lake are of views on this trip. At the city of Boulder a stop will be made to visit the beautiful University of Colorado, the state's principal educational institution, and to enjoy a Chautauqua entertainment tendered by the citizens of Boulder.

POST-CONVENTION EXCURSIONS.

It has been customary when holding conventions in cities adjacent to regions possessing great natural attractions, to arrange for post-convention excursions, and several of these have been projected to follow the present meeting. The advantages of such excursions are that they enable the members to visit portions of the country which otherwise they might never be able to see and at less cost than under ordinary circumstances. Regular attendants of past conventions recall the excursions down the St. Lawrence to Old Quebec, to the Yellowstone National Park, the Grand Canyon of Arizona, the Yosemite National Park, the Big Trees of California, Catalina Islands in the Pacific Ocean, the Columbia River, the Glaciers of the Canadian Rockies, etc., as among the most glorious recollections of their lives.

Following the Denver meeting several trips of this kind will be possible. One of these is the celebrated "Circle Trip" over the picturesque Denver and Rio



Eagle River Canyon.

Grande Railroad, through the most attractive portions of the Rocky Mountains, and covering four days, traveling by daylight only. The cost will be \$28.00 for the round trip, or in parties of ten, \$20.80.

The trip to Salt Lake City will include a portion of the circle trip, and passes through the cities of Colorado Springs and Pueblo, then through the Royal Gorge and Grand Canyon of the Arkansas River, one of the most remarkable chasms in the world through which a railroad passes, where the granite walls of the canyon tower 2627 feet on either side of the track. The road then passes through Salida, the Brown Canyon, passing Collegiate Peaks, then over Tennessee Pass of the Continental Divide and through the Eagle River Canyon, thence through the

canyon of the Grand River, and by way of Glenwood Springs to Salt Lake. At Salt Lake City opportunity will be given for seeing the great Tabernacle and the wonderful lake of saturated brine which has given its name both to the city and to the remarkable valley in which it is located. Passengers who desire to remain for a longer period of time at Salt Lake City will have the privilege of doing so.

Returning, the excursionists will have the privilege of coming by way of the same route as going, with a six hours' stop at Glenwood Springs, where they can view the famous swimming pool fed at one end by nearly boiling water from the bowels of the earth, and at the other end by ice-cold water from the mountains, or, if they prefer, they can return from Salt Lake City to Denver by way of Montrose and Gunnison through the Black Canyon, and over the Continental Divide by the way of Marshall Pass, where the track reaches the altitude of 10,854 feet.

For those who have the time to spare and the additional "medium of exchange,"



Temple Square, Salt Lake City, Showing Temple, Tabernacle, and Assembly Hall.

there will be offered the opportunity of a trip to and through the Yellowstone National Park, the expense of which includes also that of the Salt Lake trip; and there is also the possibility of making trips to the Pacific Coast at reasonable rates.

It would be useless of course to attempt even to enumerate all of the possible places to visit, or the opportunities for enjoyment afforded by the vast Rocky Mountain region adjacent to Denver, and therefore, we have attempted to mention only a few of those most conveniently and cheaply reached, which are possible to the average member who will attend the convention.

J. H. BEAL.

WHAT BOARDS OF PHARMACY CAN DO TO RAISE THE REQUIREMENTS FOR REGISTRATION.

IT is quite probable, judging from their activities, that but few boards of pharmacy have realized the full extent of the powers conferred by the law which they are appointed to enforce.

One very well settled principle of statutory construction is that when an official body is expressly empowered to discharge a specific function the grant of express powers carries with it such implied powers as are necessary to carry the expressed powers into effect. If it were not so, boards and commissions would frequently be incapable of discharging the functions imposed upon them, since the infirmities of human foresight, and the limitations of languages are such that it is practically impossible to provide in advance for all the possible contingencies of administration, or to meet the devices of those who would evade the spirit of the law while apparently complying with its literal verbiage.

While the general rule is as above stated there are limits, of course, to the extent to which implied powers can be read into a grant of express powers.

For example, it is well settled that a board cannot change the meaning of the law, or extend the scope of its provisions beyond the limits set by the legislature, or in other words that it cannot adopt rules and regulations which would operate to diminish the rights or increase the responsibilities of those affected by the law, or which would make criminal any act not criminal under the law itself, because such functions belong exclusively to the regularly constituted law-making body, and cannot be delegated to others.

In determining the nature and extent of implied powers we also must not lose sight of the fact that statute law is largely a matter of definition, and hence that the manner in which an official act is discharged, or its legal form, may have as much to do in determining its validity as the character of the act itself, i. e., that an executive act may be valid in one form and invalid in another, though in substance and effect both may be practically the same.

It probably will not be seriously disputed that the purpose of the board examination is to test the candidate's fitness to practice pharmacy with safety to the public. The manner in which the test is to be made is always left largely, and in many cases, wholly to the discretion of the board. The fact to be determined is made clear in the law, but the manner of its determination, and the final decision as to the abilities of the candidate are matters entirely within the board's official discretion.

I hold, therefore, that the board of pharmacy may properly include in an examination anything and everything it deems necessary to test the candidate's fitness for registration, provided the inclusion is made in proper manner and form.

As an example of a possibly improper method of exercising official discretion, suppose the board should adopt a formal rule that only high school graduates or graduates from a college of pharmacy would be registered. The court might overthrow the rule upon the ground that it imposed an obligation not imposed by the law. The court would likely say that it was the business of the board to test the present fitness of the candidate, not the manner in which it was obtained.

On the other hand, suppose the board avoids all such formally expressed rules, and instead should set an examination based entirely upon the Pharmacopœia, but one that would require the ability and training which an average high school graduate might be supposed to possess in order to pass. In this case I am inclined to think the court would very likely sustain the board's action; for the Pharmacopœia is a part of the law, and the pharmacist must comply with it, an obvious impossibility unless he can interpret its language and solve the problems based upon the official processes. It would be unreasonable to suppose that the court would not uphold the board in requiring the candidate to show that he can do the very things which the law says he must be able to do.

If the logic of the above illustration is sound, then without further legislation the boards have the power to enforce all proper educational requirements.

In the writer's opinion the difficulty of the board would be not so much in satisfying the courts as to the reasonableness of their action, as in satisfying the druggists who want cheap clerks, and who in their anxiety to get them lose sight of the fact that cheap clerks sooner or later develop into cheap competitors.

As a matter of fact, it is this short-sightedness that has been largely responsible for the multiplication of drug stores beyond the needs of the population, at the same time decreasing the visible supply of clerks, and also the ability of their employers to pay them reasonable salaries.

To illustrate, suppose that in a given district there is business enough to just comfortably support one store conducted by the proprietor and one clerk, and suppose the clerk leaves his employer and sets up a competing store. There is now a demand for two clerks instead of one, while the volume of business from which each is to be paid has been halved.

As a consequence both employers seek to obtain still cheaper help, and thus the vicious circle is perpetuated; for it is natural for the employe who is overworked and underpaid to imagine that his position would be better if he had a store of his own, so there is a constant tendency to multiply stores to the point where they will barely pay running expenses. Of course the stores which do not pay running expenses are eventually eliminated by the joint action of the sheriff and insolvency court, but leaving the local trade demoralized, and a tendency for the situation to repeat itself after the former disaster has been forgotten.

The program for the correcting of this excessive competition—if it is capable of correction—has not yet been worked out, but certainly one of the first steps is in the cultivation of the broad-mindedness that will on the one hand prompt the employer to pay the faithful employe as nearly the value of his services as his business will permit, and on the other hand will lead the clerk to prefer a reasonable salary to the doubtful privilege of owning a store that barely pays running expenses, or one that is drifting toward certain bankruptcy.

The part of the board of pharmacy in this program is to use to the limit their authority to require thorough and complete educational preparation on the part of those who are to become the managers and proprietors of drug stores.

J. H. BEAL.

THE MEETING OF THE AMERICAN MEDICAL ASSOCIATION.

THE sixty-third annual session of the American Medical Association, held in Atlantic City, N. J., June 4-7, 1912, is now a matter of history and cannot help but have a lasting influence on the progress of pharmacy in the United States. The meeting was attended by upwards of 3000 physicians from all sections of the country, who, divided in fourteen sections, listened to the reading of more than 400 papers.

As in former years, the Section on Pharmacology and Therapeutics presented a program that was of unusual interest to pharmacists and not a few members of the American Pharmaceutical Association from Philadelphia, New York and other cities attended the sessions of this section and took part in the discussion. Professor Joseph P. Remington at the opening session of the Section presented an address as Chairman of the delegation from the American Pharmaceutical Association and the members of the American Pharmaceutical Association present were, on motion, accorded the privileges of the floor.

Among matters of direct interest to pharmacy discussed in this Section, the first on the program was embodied in the symposium on patents and trade-marks. The discussion on this subject was participated in by retail druggists, physicians, manufacturers and others interested in the granting or non-granting of patents and trade-mark registration on commercial substances used as medicines. As a direct outcome of the discussion a Committee was appointed to request that the Board of Trustees of the American Medical Association sue for the annulment of the trade-mark registration of an article used as medicine. On motion the House of Delegates was requested to instruct the Council on Health and Public Instruction to secure legislation abolishing product patents on chemical substances used as medicines.

The desirability of a more restricted materia medica was discussed from the standpoint of the chemist by W. A. Puckner, Chicago, that of the pharmacist by Henry P. Hynson, Baltimore, medical instruction, by E. Lefevre, New York, the medical practitioner by Oliver T. Osborne, New Haven. Further discussion was participated in by a number of the members present, the general trend of the discussion being in harmony with the action of the Committee on Useful Remedies of the American Medical Association in presenting for discussion and use a list of important medicaments to which examination in materia medica subjects by state medical examining and licensing boards might be restricted, and which list might be used as the basis for instruction in materia medica subjects by teachers in medical schools.

In a joint meeting with the Section on Preventive Medicine and Public Health, the use of intestinal antiseptics and the standarization of disinfectants was discussed at length and it was shown that many of the commercially available disinfectants were inefficient and that standarization of this class of articles must be insisted on.

Dr. Robert A. Hatcher, New York, and Dr. Carey Eggleston, New York, presented comprehensive papers on the action of digitalis and digitalis-like bodies, and these communications will no doubt go far toward establishing more definite knowledge of these important drugs.

A symposium on drug standards and drug standardization was participated in by Professor Joseph P. Remington, who presented a report of progress of the U. S. P. revision; L. F. Kebler, who discussed the quality of drugs on the market; R. H. True, who reviewed the experiments made in drug cultivation by the Bureau of Plant Industry of the United States Department of Agriculture; Horatio C. Wood, Jr., who discussed the ideals and limitations of bio-assay; Henry Kraemer, who reviewed the history and the possibilities of the retail pharmacist as a purveyor of pure drugs, and Julius H. Comroe, who discussed prescribing versus dispensing on the part of medical practitioners.

The concluding symposium, of the section program, on anesthesia was one of vital importance, not alone to physicians and pharmacists, but also to patients generally who must assume the risks attending a general or partial narcosis. In the course of this symposium Professor Charles Baskerville, of New York, presented a comprehensive review of the work that he and his students have done on the chemistry of inhalation anesthetics, and incidentally pointed out the differences now existing in the standards for the several anesthetics included in different pharmacopœias. He asserted that these standards varied widely and that many, including those of the U. S. P., permitted the presence of dangerous contaminations that should not be allowed. Statistics relating to mortality from anesthetics were discussed by several physicians and the use of spinal anesthesia or analgesia was commented on at length. Although the papers presented in this symposium will well be worth careful perusal on the part of pharmacists who are interested in supplying the best that the market affords in the way of anesthetics and of preventing contamination or adulteration of the articles supplied by them.

It is manifestly impractical to review at length the proceedings of the several sections. Pharmacists who are interested will find much of value in the several communications and in the discussions on them which will be printed in the *Journal of the American Medical Association*. One feature of the meeting that might be commented on in passing is the revised principles of medical ethics adopted by the House of Delegates. Section 1 is particularly interesting in that it defines the object of a profession as follows:

"Section 1. A profession has for its prime object the service it can render to humanity; reward or financial gain should be a subordinate consideration. The practice of medicine is a profession. In choosing this profession an individual assumes an obligation to conduct himself in accord with its ideals."

Section 4 of chapter 3 relates specifically to the practice of pharmacy and reads as follows:

"Sec. 4. By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he be qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians."

Another feature of the meeting that was of more or less direct interest to pharmacists was the exhibition, both scientific as well as commercial, held an-

nually in connection with the meeting of the American Medical Association. This year the exhibits were unusually well arranged and readily accessible at all times of the day. The commercial exhibition was notably free from objectionable proprietary medicines and in keeping with the scientific exhibition was generally recognized as being of educational value. The exhibitions made by the Public Health and Marine-Hospital Service and by the Chemical Laboratory of the American Medical Association attracted considerable attention and contained much material of direct interest to pharmacists.

The absence of any exhibit by pharmacists was noticed by a number of the members of the American Medical Association who expressed regret that members of the American Pharmaceutical Association did not see fit to follow up the exhibits made on previous occasions, and the suggestion was variously made that the American Pharmaceutical Association itself undertake to finance an annual exhibition of official preparations in connection with the meeting of the American Medical Association.

M. I. WILBERT.



THE MILWAUKEE CONVENTION.

FOR years the N. A. R. D., that great organization of retail druggists, has in many ways shown its friendly regard for our own association, and consequently, it is with pleasure that THE JOURNAL calls attention to the coming N. A. R. D. convention at Milwaukee, during the week of August 12. The date was originally set for August 26, but a change was made necessary on account of its conflicting with the meeting of the American Bar Association, which is to be held in the same city.

Milwaukee is famous for various things, not the least of them being the large and beautiful auditorium in which the N. A. R. D. meeting and the National Drug Show will be held. Instead of the usual extemporized booths, made from pine boards covered with muslin, the auditorium provides artistic booths, uniform in style and size, and so constructed as to display the various exhibits to the best advantage and admitting of decorative effects of various kinds.

The past year has been a great one for the N. A. R. D., and has been marked by positive accomplishments both in presenting opposition to objectionable legislative measures and in the advocacy of wise and just ones. On numerous occasions, officers and committees of that organization have been in consultation with officers and committees of our own society upon questions of importance to the whole body of pharmacy, particularly with regard to the proper revision and correction of the Richardson Bill, which seeks to amend the Food and Drug Act. It is to be hoped that future years will bring about a still closer coöperation for common purposes between these, the two greatest organizations in pharmacy, and that they may become as closely united in active and effective work as they have been in sympathy. It is also to be hoped that at the coming meetings, both bodies will formulate and settle upon definite legislative propositions and other policies upon which they can vigorously coöperate during the coming year. When a measure has received the assent of both societies, there is little doubt but that it will represent wisely and broadly the interests of pharmacy, and when the force

of both is concentrated behind it, it will stand an exceedingly good chance of being placed upon the statute books.

The N. A. R. D. wisely restricts its membership to the proprietors of retail drug stores, because the organization was formed for the express purpose of looking after the interests of these, but among its most active organizers and members have always been found many of the most highly esteemed workers of the A. Ph. A., and the number who are members of both societies is increasing each year. This is as it should be, since the possession of a large membership in common can result only in bringing about greater unity of action, and in rendering more effective for good the reformatory efforts of both.

Those who have attended past N. A. R. D. conventions will not need to be told of what is said and done there; those who have not attended such meetings should go and see for themselves, and we trust that all A. Ph. A. members who are able to do so will attend the convention at Milwaukee.

THE JOURNAL also extends a cordial invitation to N. A. R. D. members to attend the A. Ph. A. meeting at Denver, August 19-24.

J. H. BEAL.



ADVICE TO PHARMACISTS FROM A PHARMACIST.

AT the fifth annual "joint" meeting of the New York Branch A. Ph. A. and the Medical Society of the County of New York, at the New York Academy of Medicine, a number of interesting papers were read, as reported in the Journal A. Ph. A. for June and July.

Especially two of the papers were full of meat and spice as well, namely, "What the Physician Has to Say to the Pharmacist," by Dr. Hatcher, and "What the Pharmacist Has to Say to the Physician," by Mr. Diamond. The writer, who opened the discussion, presented still another phase of this subject, namely, "What a Pharmacist Has to Say to the Pharmacists," which was as follows: "*Don't be a jack-of-all-trades, but try and be a master of professional pharmacy!*"

As chairman of the Section of Practical Pharmacy and Dispensing, the writer also used the same words in his annual address at Richmond in 1910. This is advice which pharmacists over the entire country should heed and follow and thereby help to uplift pharmacy to the rank of a profession, where it properly belongs.

OTTO RAUBENHEIMER.

Book Reviews

THE ART OF DISPENSING. A Treatise on the Methods and Processes Involved in Compounding Medical Prescriptions, with Dictionaries of Abbreviations and Terms used in British and Foreign Prescriptions, Incompatibles and New Remedies, and Numerous Memoranda for Dispensers and Prescribers. By Peter MacEwan, F. C. S., Editor of *The Chemist and Druggist*. Ninth Edition. Cloth; 584 p; 6S.4d. *The Chemist and Druggist*, 42 Cannon St., London, E. C., Eng.

The first edition of this, the standard work on prescription practice in Great Britain, appeared in 1888, and contained 288 pages; the present revised and enlarged edition contains 584 pages.

After introductory chapters dealing with the general principles of dispensing and compounding, weights and measures, special drugs and dispensing conveniences, etc., the work takes up the solid forms of medicine, as pills, pellets, lozenges, pastilles, capsules, powders, suppositories, bougies and pessaries; then deals with the more or less semi-solid preparations, as ointments, plasters, pastes and jellies. Treatment of liquid medicines is begun with a chapter on mixtures, and is followed by chapters on emulsions, lotions, injections, ampoules, embrocations, liniments, sprays and inhalations.

The main portion of the text is followed by fairly complete and well balanced chapters on incompatibilities, foreign prescriptions, and a dictionary of terms used in French, German, Dutch Italian, Norwegian, Portuguese and Spanish prescriptions.

The chapter on New and Unofficial Remedies fills 58 pages, in double column, and furnishes information and dispensing notes on over seven hundred articles.

The work as a whole not only presents a resumé of the best prescription practice in Great Britain, but is almost equally useful for American dispensers and students.

J. H. BEAL.

A TREATISE ON COMMERCIAL PHARMACY. Intended as a reference book and text book for pharmacists and their clerks. By D. Charles O'Connor; 408 pages, cloth, with numerous illustrations and plates. J. B. Lippincott Co. \$2.50 net.

The stereotyped "filling a long-felt want," may be justly applied to the above volume. Avowedly written from the commercial standpoint, it emphasizes the business side of pharmacy. It is written in a catholic spirit, however, and gives much wholesome advice respecting the professional and scientific side of the pharmacist's calling.

The idea of the book is to recognize existing conditions, and to set forth such plans and methods as will best enable the druggist to successfully grapple with the trade problems which are forced upon him.

The principal divisions are: Finance, Planning and Arranging of Business, Present and Future Problems, Thorough Knowledge of Business, Business Econ-

omies, Settlements and Store Service, Buying Goods, Salesmanship, Advertising, Window Displays, Special Sales and Side lines, and Business Building; each division containing two to eight chapters.

Altogether it is a thorough-going, wholesome treatise, and while we may deplore the fact that the business problems of the modern druggist overshadow his professional functions, we must welcome a book which considers the subject in so a thorough and adequate manner.

The volume is finely illustrated, and in general attains to the typographical excellence characteristic of the Lippincott publications.

J. H. BEAL.

MICROSCOPY AND THE MICROSCOPICAL EXAMINATION OF DRUGS. By Charles E. Gabel, B. S., Ph. D. Microscopical Food and Drug Analyst, Iowa State Dairy and Food Commission. 113 pages, with blank pages for notes and drawings. Cloth. The Kenyon Co., Des Moines, Ia.

Part one consists of ten chapters dealing with light, lenses, simple and compound microscopes, microscopic photography, accessories, manipulation, histology, micro-chemistry, preparation and mounting of objects, plant cells, tissues and organisms, microscopy of starches, etc., with laboratory exercises and instructions.

Part two deals with the microscopic examination of drugs. Directions are given for the study of thirty-five important and more or less typical drugs, followed by appendices containing tables for the determination of cell contents, reagents of general utility, diagrams illustrating the action of lenses on light, cuts of microscopical and projection apparatus, bacteria, tissue systems, microphotographs of powdered drugs, etc.

J. H. BEAL.

E. MERCK'S ANNUAL REPORT OF RECENT ADVANCES IN PHARMACEUTICAL CHEMISTRY AND THERAPEUTICS. Volume 24; 419 pages. Paper. E. Merck & Co.

This, the 24th volume of Merck's Annual Report, is similar in general character to its predecessors of the past few years, except as to its somewhat greater size.

The introductory chapter treats of the Cacodylates and their therapeutic uses, and covers 38 pages, giving a brief history of the introduction of the arsenium compounds, and dealing more extensively with later development of these compounds and their therapeutic application.

The second chapter presents a very readable account of the history of Kephir grains and their use in kephirizing milk.

The main body of the volume is devoted to abstracts from the world's medical and pharmaceutical literature on recent advances in pharmaceutical chemistry and therapeutics, beginning with Acetone and its use in the treatment of uterine carcinoma, and ending with Zinc Perhydrol.

The book also contains a Biographical Index, an Index of Authors, General Index, and an Index of Diseases, Symptoms and Indications for Treatment.

J. H. BEAL.

Papers Presented to Local Branches

OINTMENT BASES.*

DR. EUGEN UNNA.

It gives me great pleasure to address you on a subject which I hope will be of interest to you. I intend to give, in the form of a critical comparative review, a short summary of the ointment bases which have been in general use up to the present time.

As you know, up to the middle of the nineteenth century, fats of animals and plants were used for the preparation of ointments. Among these fats, mutton-fat and lard played the most important roles. Lard has always been preferred. While, like lard, mutton-fat is a mixture of the glycerides of palmitin, stearin and oleic acid, in lard the percentage of oleic acid is much higher and for this reason its consistency is softer and it is blander.

The disadvantages of both fats are that they cannot be kept long without becoming rancid and they cannot be mixed, to any marked degree, with alcohol, water, hydrocarbons, and glycerin. Yet this miscibility is the first desideratum of a perfect ointment base. In the middle of the seventies two mineral bases were placed on the market: petrolatum and paraffin. Both products are obtained in the processes of manufacturing petroleum. At that time, with these new bases it seemed possible entirely to replace the animal fats. Only the fact that it is possible to preserve lard by benzoating it enabled that fat to hold its place among the ointment bases. I may mention here that German dermatologists did not appreciate the benzoated lard for the following reasons: First, the stability was not complete; and secondly, the addition of benzoin resulted, particularly on tender skins, in disagreeable irritations.

When Hebra, the father of dermatology, about forty years ago, raised this science to the position of a special branch of medicine, it happened fortunately, that just at that time two new ointment bases, petrolatum and paraffin, found their way into the medical profession. These mineral fats which, owing to their stability and harmlessness, soon obtained an important position in the technic of ointments, are hydrocarbons of the alipathic series. By petrolatum or "vaseline" we understand, as you know, a solution of isoparaffins in liquid hydrocarbons of various combinations. Its melting point does not differ much from the melting point of lard, but in comparison with the latter it is extremely greasy and difficult to remove from parts to which it has been applied. These shortcomings, though, are equalized by a decided advantage: petrolatum can be kept

*Read at the June meeting of the New York Branch of the American Pharmaceutical Association.

indefinitely. This could not be said of lard, even if the latter was benzoated. This advantage of petrolatum being evident, how about its innocuous effects on the skin, as well as on admixed medicaments?

Petrolatum is generally believed to be stable and immutable. Nevertheless there exist in petrolatum, as you know, several oxidation products such as vasogen, vasoliment, and vaselinum adustum, which show that deterioration of the fat could be possible. Some time ago I investigated with my colleague, Golodetz, different kinds of petrolatum. The idea was to find why certain organic oxidation products after having been mixed with petrolatum lost their activity. We succeeded, partly by using the old sulphuric acid reaction, partly by means of osmic acid, to prove the existence of certain reducing bodies, which according to my opinion, must have a similar constitution to oleic acid. While we may consider petrolatum stable for practical use, we must keep in mind that it often contains reducing bodies, which undoubtedly are able to destroy the action of oxidizing medicaments.

Paraffin is entirely free from this drawback. Petrolatum is a residuum, paraffin a distillate, and is therefore purer. I do not need to discuss here the different kinds of paraffin, because I know that you are absolutely familiar with this subject; their main properties are generally the same. Paraffin ointment really is an ointment base which fulfills all demands for blandness and stability.

The advantage mentioned obtained for petrolatum and paraffin first place amongst the ointment bases whilst lard, and even benzoated lard, lost the greater part of its importance. But these ointment bases are not yet the ideal ones. A most important property is still lacking in them to a great extent, that is, miscibility with water and other liquids. Experiments which I have made with the just-mentioned bases have shown that none of them would combine with more than 30 per cent of water.

When in 1885 the adeps laneæ or lanolin was put on the market, this above-stated disadvantage seemed to have been overcome. To avoid misunderstanding I wish to define the terms "wool-fat" and adeps laneæ of the Pharmacopœia. The Pharmacopœia of the United States calls adeps laneæ a purified wool-fat. This termination leads us to think that the difference between these substances is just about the same as the difference between crude zinc oxide and the purified zinc oxide. That that is not the case was shown by the thorough investigations which P. G. Unna made about the ingredients of wool-fat and of the so-called purified adeps laneæ or "lanolin." I quote from his report of these investigations the following: "At that time we were entirely in the dark as to the difference between wool-fat and the purified wool-fat, 'lanolin.' We know now, though, what we have to understand under the term 'purified wool-fat.' It is a mixture of the above-mentioned alcohols and fat acids, partly in the free state, partly combined as ethers; it contains outside of this 5 to 8 per cent of natural potassium soaps. When compared to the other fats it is characterized by the following properties; it contains ischolesterin, oxycholesterin, lanocerin acid and lanopalmin acid, whilst glycerin is entirely lacking.

"Lanolin, therefore, is only a part of the natural wool-fat; it contains all the ingredients of the latter, but their quantity is entirely different, for during the

process of cleaning wool-fat, the greatest part of all three cholesterins and a large percentage of the lanocerin wax is lost."

We will see that through the method of cleansing used for the *adeps lanæ* of the Pharmacopœia, we lose its most important constituent. Now it is just on account of this constituent that *adeps lanæ* has been accepted by the Pharmacopœia. I will prove that the acceptance of the wool-fat in the purified state was a mistake in the Pharmacopœia. After Hartmann, in 1860, and Schulze, in 1872, had proved that the fat of sheeps' wool contained cholesterin and isocholesterin, O. Braun discovered the peculiar property in this same fat, of taking up, in a physical way, large quantities of water. Liebreich claimed, in 1886, that the latter property was brought about by the former. Yes; he even went so far as to say that the absorbing quality was a reaction for "cholesterin fats." It is also due to the authority of Liebreich that this opinion, based upon poor experiments, soon found its way into the most important medical text books. For years it was considered as a fact without receiving the slightest opposition. This was very feasible, for Liebreich gave for his opinion an explanation which at that time seemed credible enough, but nevertheless was based upon great errors.

The next fault that Liebreich had made was, that he started with the wrong opinion; that is, that the capacity for absorbing water belonged to the cholesterin ethers.

In order to prove this, he used Liebermann's cholesterol reaction, by which free cholesterin, but not its ethers, is shown. Without taking notice of this fact, he simply claimed that this reaction could be used for cholesterin fats. He says: "Cholesterin fats, in which not a trace of free cholesterin could possibly be present, were shown with extreme sharpness by the cholesterol reaction." Taking this second error as a fact, Liebreich examined the human skin, which, as you know, contains cholesterin, on the cholesterol reaction. He showed the presence of free cholesterin, but he himself believed that he had shown his cholesterin fats, to which, according to his opinion, belonged the capacity of absorbing water. He even went so far that he claimed the human skin, showing the cholesterol reaction also must contain "lanolin" (*adeps lanæ*).

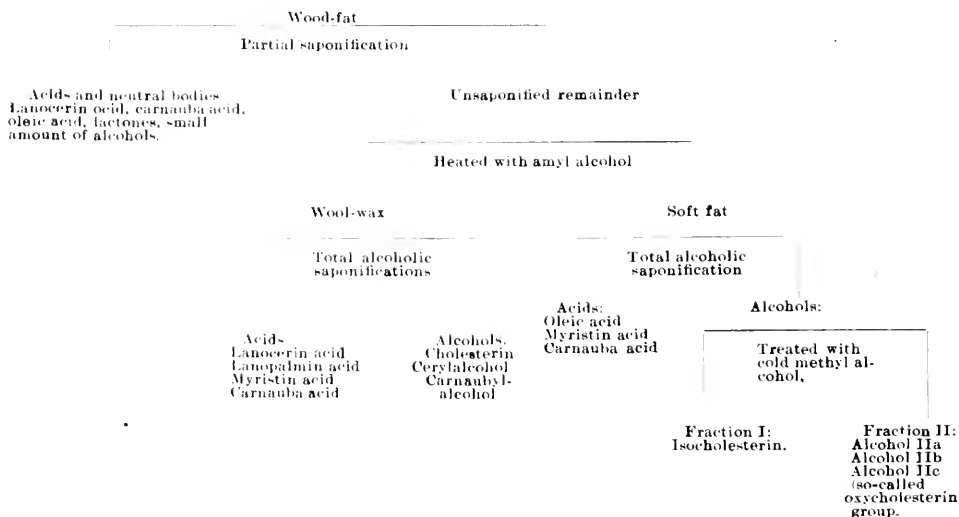
We are indebted to the Russian chemist, Lifschuetz, for having discovered, after twelve years of work, in wool-fat the body to which only belongs the power of absorbing water. Thus he enabled P. G. Unna finally to correct the errors of Liebreich, which have been accepted by the pharmacopœias of all nations, up to the present day, as facts. Lifschuetz first isolated the cholesterin ethers of Liebreich and proved that no noteworthy power of absorbing water belonged to them. Then he discovered his well known acetic-sulphuric acid reaction on the spectrum of which he clearly could determine the relative absorbing power for water.

He arrived further at the very logical conclusion: "If a reaction shows by its intensity the relative capacity for water, it must necessarily be also a reaction for the very body to which belongs this capacity of absorbing water." In this way he succeeded partly by saponification, partly by alcoholic extraction and fractional distillation, in isolating a body from the wool-fat, which he called alcohol II. c. and which forms a group of free alcohols of iso and oxycholesterin. To this

group then belongs the water-absorbing power of wool-fat, but it is only contained to a small percentage (about 0.5 per cent) in the crude fat.

The adeps lanæ of the Pharmacopœia contains this important body in a still smaller percentage, as by the peculiar process of purification, just this body is almost lost. P. G. Unna, to whom we are indebted for the thorough investigation of the new body of the oxycholesterin group, discovered by Lifschuetz, eucerin wax, and the new ointment base prepared from it, eucerin, the composition of which we shall consider later, has shown by his experiments that the commercial adeps lanæ has a capacity for from 30 to 200 per cent. of water, while eucerin wax combines with 700 per cent. The principal difference in the composition of the adeps lanæ of the Pharmacopœia and the eucerin, or, if I may say so, the improved adeps lanæ, is the following: In the adeps lanæ of the Pharmacopœia the good properties of the oxycholesterin group are sadly influenced by the presence of the high molecular acids and alcohols. In the new ointment base, eucerin, we find the only important constituent of adeps lanæ free from all drawbacks ready to display its action unrestricted. By the addition of 5 per cent. of this eucerin wax we are able to combine any fat with an amount of water up to 300 per cent. and even more.

Allow me to demonstrate to you in the following the composition of the crude wool-fat, of the adeps lanæ of the Pharmacopœia, and the isolation of its most important constituent, the eucerin wax:



Let us now consider the properties of adeps lanæ. Crude wool-fat has a disagreeable odor which even adheres to the purified adeps lanæ. It cannot be kept any length of time without becoming rancid. The absorbing power for water is changing with the degree of the so-called purification, for, as I said before, the more wool-fat is purified, the smaller becomes its absorbing power for water. Extreme purification is liable to give you an adeps lanæ which will not absorb any appreciable amount of water.

Another and probably the most objectionable feature is its pitch-like tenacity.

This tenacity and also its proneness to rancidity are due to the presence of the just-mentioned acids and alcohols.

You know yourselves how difficult it is for the pharmacist to prepare ointments with *adeps lanæ*. In order to show you its disadvantages as a medicinal agent, I have to explain first the value of an absorbing capacity for water in therapeutics.

Cooling ointments or cold creams are of great importance to the dermatologist. The cooling effect is brought about by the water which is incorporated into the fat. As you know, this cooling effect is dependent on a physical phenomenon. Water has the property of evaporating. For this purpose it needs heat. This heat it abstracts from the surrounding surface, in this case from the human skin, which is cooled thereby. It is clear, therefore, that the larger amount of water present and the quicker its evaporation, the greater must be the cooling effect.

Adeps lanæ does not take up water readily. The suspended water it gives up slowly on account of the tenacity of the fat. In other words, the cooling effect is thereby decidedly minimized. In eucerin the result is just the reverse, owing to its great affinity for water and its lack of tenacity. Here we have the full benefit of evaporation of the water contained in the ointment, and the long-ventilated question as to a suitable basis for cold cream has found its happy solution in the discovery of this substance.

But in this combination of wax alcohols with mineral fats we will find another very important property. That is, the facility with which the ointments prepared with it can be rubbed into the skin. The reason therefore seems to be of a physical nature and due to the hydrophilia of the oxycholesterin group. When I speak about the concentrated eucerin-mercury ointment, I shall have an opportunity to give you a striking example of this property.

Now we have to ask: "What have modern therapeutics and cosmetics to demand of a perfect cold cream?"

First. It must have a great absorbing power for water; secondly, its fat basis must be unchangeable; and finally, its consistence has to be soft, but not greasy or even sticky. All these properties we find separated in the ointment bases known hitherto, but nowhere combined. *Adeps lanæ* has a rather great absorbing power for water, but its action is only slightly apparent. It is of great tenacity and stickiness, and its fat basis cannot be kept long. *Petrolatum* and paraffin, although they may be kept long, are lacking in an absorbing power for water, and therefore cannot be used for the preparation of cold creams. Lard has the advantage of great softness and blandness, but it does not have the important keeping qualities and the capacity for water.

The compilers of the *Pharmacopœia* in constructing the formula for cold cream had to ignore the other properties and took into consideration only the softness. They prescribed a mixture of white wax, *spermaceti*, and oil of almonds, and so succeeded in preparing an ointment base of great softness and blandness. But, as the ability to take up water was lacking, the percentage of oil of almonds had to be increased to such an extent that the keeping qualities

became diminished. The result was, that the cold cream of one Pharmacopœia did not contain more than 19 per cent. of water, while in the cold cream of another Pharmacopœia was combined only 25 per cent.

This has been the situation up to the present day. It was clear that the problem of the cold creams was solved at once when we became able to incorporate with any stable and harmless ointment base a body which gave to it the lacking properties of softness and absorbing power for water. This body is eucerin wax, discovered by Lifschuetz. Only 5 grams of this wax melted together with 95 grams of petrolatum or paraffin ointment form an ointment base of extraordinary softness, which can be kept indefinitely and which may be combined with water up to 500 per cent. Such a great amount of water is desirable, of course, only in special cases. There has therefore been recommended as the cold cream of the next edition of the German Pharmacopœia, a paraffin ointment which contains 5 per cent. of eucerin wax and 60 per cent. of water, that is to say, more than three times as much as unguentum aque rose.

We had the same difficulties for years and years with unguentum glycerini, and the successful solution of this problem is also due to the discovery of the new wax alcohols. In spite of the complicated formulas which came into use in the course of years, it was not possible to prepare an ointment base which could be combined with more than 40 per cent. of glycerin. However, a combination of petrolatum with 5 per cent. of the oxycholesterin alcohols will take up 400 per cent. of glycerin.

As the time which I am allowed to speak is necessarily limited, I cannot go through the development of the formula for unguentum glycerini of the Pharmacopœia. Therefore, I refer to the thorough investigations of unguentum glycerini cum eucerino by P. G. Unna and P. Unna, in which the question of the unguentum glycerini seems finally to be settled. The formula which has been recommended for the German Pharmacopœia consists of a mixture of 20 grams of anhydrous eucerin and 20 per cent. of glycerin.

I may mention here that we have to understand under eucerin wax the group of free alcohols of the iso- and oxycholesterin group. Five grams of this wax together with 95 grams of petrolatum give the anhydrous eucerin, which forms by the addition of a certain quantity of water the eucerinum cum aqua.

I am now going to speak about one of our most important ointment combinations, mercury ointment. The pharmacopœias of all nations have always shown the highest interest in this universal medicament for syphilis. At all times it was the principal idea to prepare an ointment which contained the mercury as concentrated as possible. Let us consider next the formula given by the last edition of the German Pharmacopœia. There we find a very complicated formula which seems to have been brought about with the intention of facilitating the disintegration of the metallic mercury; 40 grams of lard, 25 grams of suet, 5 grams of adeps lane, and 1 gram of peanut oil are mixed with so many grams of mercury that an ointment containing 30 per cent. of mercury is formed. I do not need to emphasize that besides the small percentage of mercury

we have here a combination of all the drawbacks of the ointment bases previously mentioned. The formula of the United States Pharmacopœia had already proved a progress. It contains 50 per cent. of mercury, is less complicated, and denotes an effort to increase the keeping properties of the lard by benzoating it. Nevertheless, this ointment also becomes rancid. This disadvantage ought to be strictly avoided, however, as this particular ointment, in mercury inunctions is absorbed by the human skin more readily than any other preparation.

All these disadvantages have been avoided at the Eppendorfer Krankenhaus, the governmental hospital of Hamburg, by introducing a preparation of the following composition: 135 grams of mercury and 30 grams of anhydrous eucerin were mixed with the subsequent addition of 6 grams of water. The result was an ointment containing 79 per cent. of mercury. By diluting with eucerinum cum aqua, an ointment could easily be obtained, the amount of mercury in which corresponded to the formulas of the United States or German pharmacopœias. The disintegration of the mercury in this formula is very simple and can be done with great rapidity. But, besides that, we find here another new property. While inunctions made with the mercury ointment of the Pharmacopœia took about twentyfive to thirty minutes, experiments which have been made with the eucerin ointment in German hospitals have shown that five to six minutes were sufficient to make the mercury disappear in the skin.

In conclusion, allow me to summarize once more the main properties of the mentioned ointment bases in the form of a table:

	Odor	Consistence	Stability	Capacity for Liquids
Lard	existing	very soft	becomes rancid	very small
Suet	existing	rather soft	becomes rancid	very small
Petrolatum	none	soft	can be kept	small
Paraffin ointment	none	soft	can be kept	small
Adeps lane	existing	greasy and sticky	becomes rancid	up to 200 per cent.
Eucerin	none	very soft	can be kept	up to 500 per cent.

It is not the object of this address to give a review of the practical uses of the ointment bases in therapeutics. I have spoken thoroughly about this matter in an address given before the Royal Society of Medicine in London. Therefore, should you be interested, I take the liberty of referring you to that address.

It seems to me by the analysis of adeps lane and the discovery and isolation of the very important group of wax alcohols, that we have entered a new stage of ointment technic. It is difficult to say to which of the above named ointment bases will be accorded the position of greatest efficacy. The most suitable would be lard on account of its soft consistence. This can only be possible if we should succeed in increasing its keeping properties indefinitely by adding a body which in contrast to benzoin is harmless and which is, on the other hand, of such a character that the ointment base prepared by it does not lose its harmlessness, in spite of the addition of medicaments of any kind.

As long as that is not possible we will have to prefer the stable mineral fats, whether they are called petrolatum, paraffin, or otherwise. Adeps lane loses its

importance utterly, since we are able to isolate its most precious constituent, free from all the drawbacks of the crude fat. Eucerin wax, finally, is not an ointment base at all, but the long-sought-for body, by means of which we are able to render any stable fat into an ideal ointment base.

THE PRODUCTION OF VACCINE.*

W. F. ELGIN, M. D.

I shall discuss the question of vaccination tonight largely from the laboratory side, leaving for the gentlemen who follow me, its practical application. But to make a connected story for the benefit of those present who may not be familiar with the subject, I shall call attention to a few historical facts in reference to smallpox, the ravages of the disease, and the earlier methods employed to secure protection.

It is thought by some that the great plague of Athens referred to in the History of the Peloponnesian War, was smallpox. It was probably unknown in China prior to the twelfth century, B. C., but is said to have prevailed in India at a much earlier date.

Rhazes, an Arabian physician who died in 932, A. D., seems to have been the first to give a succinct account of the disease.

According to some authorities, the disease was probably unknown in Europe prior to the sixth century; others claim a much more remote antiquity. Smallpox appears to have been introduced into Mexico by the Spaniards in 1520, and is said to have destroyed 3,500,000 people; in some places whole tribes were wiped out.

In 1707, smallpox was introduced into Iceland, where it apparently had never existed before. Eighteen thousand out of 50,000 died of the disease.

From the fifteenth to the seventeenth century, it was practically universally present in most of the large cities over the known world. The epidemiology resembled measles of the present day. No class of society was exempt. The king on his throne and the peasant in his hut were equally liable to the contagion. The question asked in the industrial world was "Have you had your smallpox?" just as today we ask "Have you been vaccinated?"

There was a high smallpox death rate in all large cities at that time. Dr. Farr estimated deaths from variola in the eighteenth century at about 4000 per million. Sir Lyon Playfair's estimate for all England was 3000 deaths per million, and it is calculated that about one-twelfth of the total mortality from all causes was due to smallpox. Smallpox was preëminently a disease of childhood. In Berlin from 1758-74 6000 deaths were reported, and only about 45 over 15 years of age, or one in 147 deaths.

Facts of this character could be presented almost without number, showing

*Report of a lecture delivered to the Philadelphia Branch, May 7, 1912.

first, the enormous loss of life due to the disease; second, that the disease was very largely confined to children.

In discussing the disease at the present time, previous conditions must be borne in mind or we will fail to realize that some potent factor is responsible for what would otherwise be a marvelous change in the epidemiology of the disease.

It would be interesting at this point to enter into a discussion of the question of immunity underlying the whole subject of vaccination which was first exemplified in the attempt to prevent smallpox; but time does not permit. Suffice it to say that various theories have been advanced by Pasteur, Chauveau, Metchnikoff, Bucher, Nutall, Behring, Roux, Ehrlich, Wright, Wasserman and others, each in turn being in a measure superseded by the others, but all throwing light on this vexed question, until at the present time we are in a position to say that acquired immunity to a contagious disease depends upon a more or less profound impression made upon a higher organism by products thrown off by the micro-organisms, causing a specific disease. These products are proteids chemically, and the action appears to be a physiologic-chemical one, whereby the exciting poison, or antigen, stimulates the cells of the host to an antagonistic reaction. This reaction is largely specific and is directed to the protection of the host from the specific disease engendered by the invading microbe. In the light of this definition of "immunity", I will briefly sketch the methods employed to immunize against smallpox.

Inoculation.—In 1717 Lady Mary Worley Montague, wife of the British ambassador to Turkey, wrote a letter to a friend in England, describing the method of conferring artificial immunity used in Turkey known as "protection by inoculation," being nothing more or less than taking smallpox virus from a diseased person suffering with a mild type, and inoculating into a well person, thus conferring upon him a slight attack of the disease. This method continued in use in England for a number of years and spread over the most of Europe. It was never popular, however, with the peasant class. It was open to the objection in that while it conferred immunity, patients sometimes died. It was likewise probably one of the most potent factors in spreading the disease, since a person contracting smallpox by inoculation was just as liable to spread the contagion as one who took it in the natural way. It was prohibited in England by act of parliament in 1840.

Introduction of Cow-pox.—In the early part of the seventeenth century, several observers noted a tradition in the dairy districts to the effect that persons who had become infected with a localized skin eruption known as "cow-pox" from milking or handling cattle, were immune to smallpox.

Dr. Fewster, of Gloucester, in 1765 seems to have sent a paper to the Medical Society of London, indicating that inoculation failed in persons previously affected with cow-pox.

In 1774, a farmer, Benjamin Jetsy, of Dorsetshire, vaccinated his wife and two sons with this virus. Fifteen years later, one of the sons was inoculated with smallpox virus with negative result. This tradition seems also to have been known in Germany, Italy, the South of France, Holland, and elsewhere,

but nothing of a practical nature was accomplished until Edward Jenner took up the question and made a scientific study of it.



DR. EDWARD JENNER,
Discoverer of Vaccination.

Jenner studied medicine under the celebrated John Hunter, of London, and began practice near Berkley, where he came in contact with this tradition. So impressed was he that he made a number of experiments, inoculating people who had had cow-pox with smallpox, and finally on the fourteenth day of May, 1796 (known as the birthday of vaccination) he inoculated a boy—James Phipps—with a sore from the hand of a milkmaid who had accidentally been infected with cow-pox. A successful vaccination resulted, and a few weeks later he inoculated the same boy with fresh smallpox lymph, without results. So thoroughly was he satisfied with the results of these experiments, that

he reported them to the Royal Society in June, 1798, in a paper entitled, "An Inquiry into the Cause and Effects of the Variolæ Vaccinæ, a Disease Discovered in some of the Western Counties of England, particularly Gloucestershire, and known by the name of Cow-pox."

This method of protection was tried out in a number of hospitals. Thus in 1802 Dr. Woodville reported that he vaccinated 7500, about one-half of whom were afterwards inoculated with smallpox without results.

On October 31, 1802, King Frederick William of Germany stated that the Medical College had reported 17,741 carefully observed vaccinations, of which 8000 were subsequently tested by inoculation.

Dr. Waterhouse, of Boston, received a small supply of virus from Jenner, and vaccination began in this country in 1802.

Early Method of Propagating and Preparing Virus.—As it is well known, the early methods of obtaining virus was known as the "arm to arm" method; that is, a child in healthy condition was vaccinated, and on about the eighth (?) day when the vesicle was considered "ripe," a small part of the clear lymph was taken, and put up in capillary tubes or charged on ivory points for the routine vaccination of that particular district. This method was used in England until about 1898, when it was largely superseded by the glycerinated virus.

In this country we first used what is known as the "scab method." A child was vaccinated and when the scab dropped off, it was wrapped up in beeswax or other impervious material until required. It is reported that this virus could be kept for some time, even as long as several months, and still remain active. Objections to these methods were raised by anti-vaccinationists and others, because of the possibility of conveying some disease other than vaccinia. A few cases of syphilis were undoubtedly transmitted in this way.

In 1842 Negri seems to have modified the method introduced by Galbiati of inoculating the virus from one calf to another to obtain material for human vaccination.

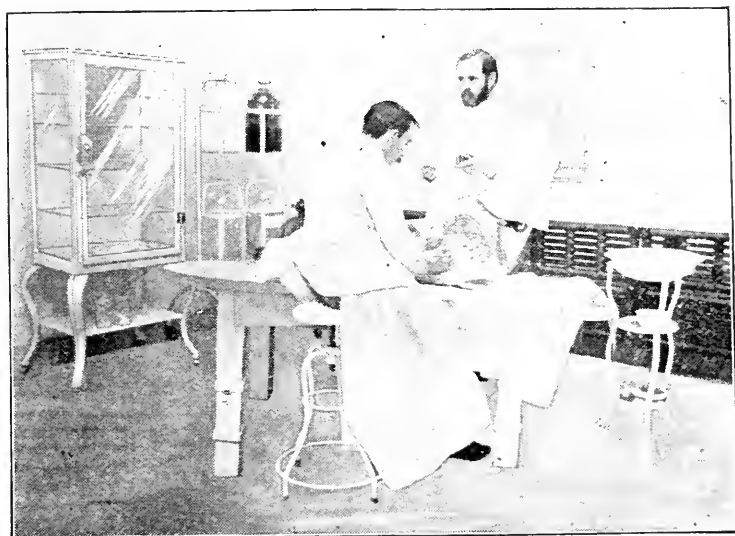
In 1870 Dr. Martin, of Boston, introduced this method in the United States. Crusts taken from the calf were then used. After this goose quills roughened on an emery-wheel were dipped into the pock on the animal and these were employed for the purpose of vaccinating.

This was followed some years later by the ivory points. These were made from ivory chips, a by-product of ivory manufacturers. The objection to all of these forms was that the virus was always contaminated.

My first experience when beginning the work some twenty years ago may be briefly summarized as follows:

Stables—rough sheds, white-washed once or twice a year, with animal refuse over everything. Corn stalks and manure from six to eighteen inches deep.

Animals—small calves, inoculated in small squares on the abdomen, and crusts removed on third or fourth day, amid fecal accumulation, and filth with prac-



A Modern Vaccine Laboratory.

tically no attention to cleanliness. This underlying pus was charged on ivory points with soiled brushes and hands; in fact the whole picture was unthinkable when viewed from the standpoint of our present knowledge.

Insofar as I have been able to learn, these were the normal conditions at practically all vaccine plants at that time.

Virus had to be removed on the third to fifth day or the putrifying odor became offensive. Necrosis of tissue only was noted, and because this necrotic process was more rapid than vaccinia and usually entirely overshadowed it, the normal lesions of vaccinia were rarely observed, and we did not know at times whether vaccinia was present or not.

In 1898 Monckton Copeman delivered his Milroy Lectures, dealing with vaccine virus, and the results of some experiments with the admixture of glycerin with the virus, showing how virus was purified by this method.

Copeman was, however, not the first to mix glycerin with vaccine virus.

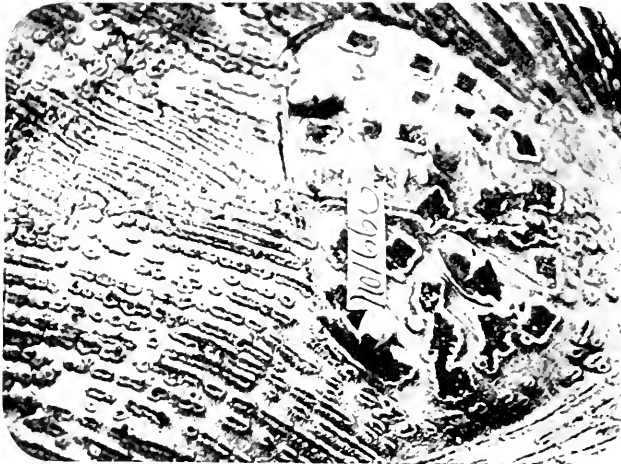
Müller of Berlin had done this for quite a while in order to increase the bulk of the virus and to act as a preservative. He did not seem to appreciate, however, the purifying effect of this method.

Koke reported somewhere about 1887 that the number of extraneous organisms decreased in the glycerinated lymph. He seems to have missed the importance of this statement because he stopped just at this point.

On a visit to Rome some years ago, I called the attention of Prof. Leoni to these facts and he stated that he had begun a line of investigations in December, 1888, looking to the purification of virus by this method, and had published his results in 1890, about one year before Copeman's publication.

Investigations of these observers and others prove that when from 50 to 60% of glycerin is added to the virus taken from the animal and allowed to remain under certain conditions for varying periods of time, a large reduction of non-spore forming germs can be noted from week to week.

The Reasons for Using Glycerin with Vaccine Virus.—You will note from what has already been said that at the present time glycerin and water are



Developed Vesicles on Vaccinated Calf.

mixed with the virus in about the proportion of 60% for the dual purpose of first, as a preservative; second, for purification.

As previously noted, this work was described by Copeman in his Milroy Lectures in 1898, and I immediately began investigating the properties of glycerin with virus; it was only after two years work that I could convince myself that virus submitted to this treatment would remain active the length of time described by Copeman; and in fact, after we had begun the work at Glenolden, several facts developed for which we could not account on the theory that glycerin preserved the vaccine at the same time destroying bacteria.

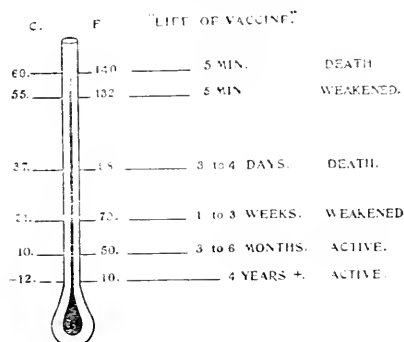
During the summer numerous complaints were reported where the vaccine did not give the expected results. Further experiments demonstrated the fact that heat was an important factor, causing the destruction of bacteria and at the same time destroying the virulence of the vaccine. In other words, the temperature of

the ice chest where the material was stored was one of the most important facts to be considered.

You will note the curved line marking the point of destruction of germ life crosses the life-line of vaccine in the summer season. In other words, virus sent out during this time of year will not stay active as long as the germ content. At the time this experiment was made, we kept virus in this laboratory under ordinary ice-chest temperature, and found that the germ life and the life of the virus were practically destroyed. The only way that we have been able to overcome this during this season of the year, and at the same time prepare a safe virus, is not to undertake to destroy germ life, but to test for the virulence of the germ life from week to week until it is no longer pathogenic.

Please remember that these experiments were made before the introduction of the cold storage method of keeping virus.

The experiments showing the importance of cold storage to vaccine production may best be illustrated in this slide.



Taking the same virus and subjecting it to different temperatures, we have found that 60° C. killed virus in 5 minutes.

55° C. weakened it so we can note degeneration in the vesicles produced.

At 37° C. the virus will last from 3 to 4 days.

At 21° C., which we regard as practically room temperature, from 1 to 3 weeks showed deterioration of the product.

At 10° C., which is the usual ice-chest

temperature, the virus will stand for three months or longer, occasionally as long as a year.

At -12° C. we have kept it four years, and it remained in good condition after being removed and subjected to ordinary ice-chest temperature. You can now understand the importance of this second factor to the preservation of virus.

This work was done at our laboratory after encountering the difficulty with the method discussed by Copeman in applying it to conditions of extreme summer heat, long shipping distances, long dating. Experiments were begun in 1899 and the first report regarding this was made at the American Public Health Association in 1900.

Shortly after this Blaxall began investigation, and reported to the Local Government Board and confirmed it in 1907; however, I am sorry to say, without any recognition of the work done in America.

Tubes of virus were placed at the temperatures noted before, and removed at stated periods, the virus plated and the number of colonies noted. From this you will see that the temperature of 60 degrees killed the non-spore contained bacteria in 30 minutes.

A temperature of 55° C. left less than 69 colonies.

A temperature of 37°, after an exposure of 3 days, left only one colony.

A temperature of 21° C. exposure of 5 weeks, before it was cleaned up plating, week by week.

A temperature of 10° C., exposure 9 weeks, before bacteria were entirely cleaned out.

At —12° C. we have never been able to clean up bacteria—in fact the virulence of staphylococcus was isolated from vaccine after four years and inoculated into a rabbit, causing the death of the animal.

As has been observed from slides previously shown, it is impossible to destroy all of the non-spore bacteria in glycerinated virus, because of the close relation between the life of the virus and the life of bacteria, in other words, because the virus itself is so near the death point when bacteria are eliminated as to be practically worthless when it leaves the laboratory and reaches the hands of the consumer.

For quite a while we did not recognize this, and as a result, numerous complaints were registered against the virus during the summer season, when it was extremely important that active vaccine should be in the hands of those having the field work to do. This method was then abandoned, and in its place we determined to attenuate the pathogenic contaminating organisms rather than attempt their total destruction. This method may be described as follows:

"Virus is put in the ice-chest at a temperature approximately 12° C. and held there until such a time that it is believed the contaminated organisms are rendered harmless, although not necessarily destroyed. Large numbers of them, however, are destroyed as shown by plate culture taken from day to day. Probably the more active ones remain, but these lose their virulence before the testing point is reached. At this time plate cultures are made and staphylococci and streptococci isolated; bouillon cultures are made of these and kept in the incubator for 24 hours and then injected intravenously into a rabbit in quantities of 1 c. c. to each 1000 grams of body weight of the animal.

These animals are kept under observation for a week, the weight taken every other day, and at the end of this time they are killed and cultures made. If any lesion is noted that may be caused by these organisms the virus is again placed in the ice-chest at the temperature of 12° C. for a week longer, and the process repeated. If any other suspicious organism is found, similar methods are used to determine its pathogenicity.

Anaerobes.—As is well known to the most of you, the tests which I have already suggested are only possible with organisms which grow in the air. Any anaerobic organism which might be in the virus could not be determined by this method. Because of the fact that tetanus has followed the use of vaccine very careful testing is done to determine the absence of this organism.

Tetanus being a very powerful toxine producer, the test is comparatively easy. Our method is as follows:

10 c. c. of the virus to be tested is placed on bouillon in a modified Smith tube, allowed to grow for 10 days at incubator temperature, at the end of which period a culture is made on a slide for microscopic investigation. The culture is then filtered in order that the germ life may be taken out while the toxin itself passes through the filter.

5 c. c. of this filtrate is inoculated into a guinea pig and the animal is kept under observation, and must remain alive for 14 days before the experiment is considered satisfactory.

In addition to this 2 c. c. of the crude virus is injected into a guinea pig which is also kept under observation for at least 10 days to see if anything develops other than vaccinia. This work with slight variation as to technique, I have reasons to believe is carried on by all laboratories propagating vaccine virus, and you can readily recognize its importance when you recall the fact that for the past 10 years an occasional report of tetanus following vaccination has been noted from year to year. It is natural to suppose that the virus was responsible for this condition, and yet the investigations made by the number of laboratories in the last 10 years, both experimental and as a routine procedure, have failed to determine the presence of the tetanus germ in any sample examined in this country, as reported by the Committee on Vaccine at the American Public Health Association meeting in Richmond in '08. At that time there had been 5,800 tests made and possibly the number by this time is nearly double.

The only time that the tetanus germ has been reported in vaccine virus was by Carini of Berne, and the possible case of Dr. Robt. N. Willson of Philadelphia.

Dr. Willson, however, is not sure that he found the organism.

Attention is simply called to this matter because of its importance to persons responsible for vaccinating and the after care of the vesicle. Tetanus is probably more prevalent in the eastern part of the United States than in former years. It is possible that the wound may be contaminated with the dust from the streets, in fact any wound whether from vaccination or not may be contaminated and tetanus follow.

In concluding this section, I wish to make some practical suggestions to those handling and using virus that may be of value.

The United States Government requires a date to be placed on biological products giving the supposed minimum of the length of activity. From what has been said you can readily see that this is entirely problematical in a given sample, because no one knows the temperature conditions through which it is required to pass before it reaches the hands of the consumer, nor can we say how it is going to be stored when in the local drug stores.

You have seen that it can be killed very quickly by high temperatures, while below 0° C. it remains active for an undetermined period.

Therefore vaccine should never be kept in stock in a drug store (except in very small quantities) or any other place outside of the laboratory except below freezing point, which is usually impossible except in the dead of winter. The rule is that virus should never be kept in the summer season for local distribution, excepting it is to be used immediately.

Order in small quantities and order often and better results will be obtained.

Again I wish to call your attention to an error made by ordering routine vaccination for Public School purposes in September.

We are compelled to put up the virus in the summer months and ship it in the heat of August and September, and as a result it is frequently worthless when used.

The Doctor, if conscientious, has to do his work over several times before getting the desired results, or the patient has to go to school vaccinated but not protected, because the virus did not take.

Immunity Conferred by Vaccination.—In the first place permit me to call attention to the fact that the Local Government Board of Great Britain require three separate and distinct vaccinations and claims it takes at least one-half square inch of vaccinated surface to afford complete and lasting immunity.

It is the custom of the United States to vaccinate at but one point; frequently this is sufficiently large to cover the requirements previously indicated.

Supposing that a person has been vaccinated to the point of saturation then the question is asked—how long will this protect against small-pox? We must not forget in attempting to answer this question, there are no two persons equally susceptible to any disease; in other words that the amount of natural immunity varies with the individual.

We must be guided by some rule in our work and in order to establish some basis for comparison, I have devised this chart.

You see, it stated in almost all literature on the question, that when a person is vaccinated in infancy and again at 10 or 12 years of age, the protection usually stands during life.

How true this may be in reference to smallpox, I do not know, but I know it is not true in reference to vaccination. Over and over again I have seen employes in our laboratory get a vaccine infection in almost any part of their body which happened to be scratched and was exposed when handling the virus, which vaccination may be repeated in three months' time, or in a year or longer.

I have seen some individuals who seem to be impervious to the disease altogether, yet if they continued handling the vaccine year after year a time will come when the natural immunity is at low ebb and the person will take the infection.

PRECAUTIONS TO BE OBSERVED IN STORING VACCINES FOR DISTRIBUTION.*

W. L. CLIFFE.

The part assigned to me in the discussion of this evening relates entirely to the functions of the retail pharmacist as a distributor of these products upon the prescription or requisition of the medical practitioner.

As a distributor of Biologic Preparations the retail pharmacist has a much more important part than he is generally credited with or even than the majority of pharmacists appreciate. Owing to the high grade of technical skill and the large

*Read before the Philadelphia Branch, May 7, 1912.

capital required for the maintenance of a plant it is not likely that manufacturing establishments will be generally located near enough to the physician for him to be able to obtain his supplies direct from the maker without the intervention of the pharmacist as a distributor.

The time that would elapse in procuring the antitoxic serum or even the vaccine from the maker, notwithstanding modern methods of communication and transportation, would be serious and detrimental in most cases.

It therefore becomes a necessity to have supplies at hand in each locality, and logically and naturally the pharmacist is the recognized distributor.

To fully consider the responsibilities of the situation and the necessary precautions entailed upon the purveyor of this class of products is important for the pharmacist who intends handling serums and vaccines.

Ever since they were first produced there has been no material disagreement among experts that light, air and temperature are the important factors in the preservation and storage of this class of products, and the Pharmacopœia fully recognizes these principles in its directions for the preservation of Serum Antidiphthericum, the only one official, which is as follows: "It should be kept in sealed glass containers in a dark place at temperatures between 4.5 and 15 degrees Centigrade (40° to 50° F.)" Two of these factors, in so far as the distributor is concerned, have been cleverly controlled and eliminated by the makers, who have generally adopted packages consisting of either ampoules, or ampoules convertible into syringes which are packed in light-proof containers.

The third factor, or that of temperature, is therefore the one that is important for the distributor, and it may be tersely stated that it is useless for the pharmacist to attempt to handle this class of preparations who does not have a refrigerator and maintain in it a temperature of somewhere near 10 degrees Centigrade (50° F.) with a range of not more than ten degrees Fahrenheit or about 5 degrees Centigrade, either way.

It does not necessarily follow that the equipment must be elaborate or expensive, and there are a number of types of refrigerators on the market that are well adapted for the purpose. One of the best and easiest kept clean is made from thin plates of enamelled steel in both square and cylindrical shapes and of convenient sizes. The writer has found one of this type perfectly satisfactory and capable of maintaining on the average a temperature of about 50 degrees Fahrenheit under ordinary store conditions.

Another important matter is the question of age, but as the relation of age to efficiency has been pretty thoroughly worked out, and as every maker sends out his package with the limit of time for use plainly stated thereon, the only obligation upon the distributor is to dispense products within the time limit.

In this connection, it should be remembered that this time limit involves storage under prescribed conditions, and that deviation from what is recognized as a necessity in the situation can bring about a condition in the product that makes the time limit of no value whatever as an index to efficiency.

THE ARGUMENTS OF ANTIVACCINISTS AND THE MEASURE OF TRUTH AND ERROR CONTAINED THEREIN.*

JAY F. SCHAMBERG, M. D., PHILADELPHIA.

In 1798, Jenner announced to the world a means of staying the ravages of the dreaded disease, smallpox. In order to appreciate the importance of this discovery at that time, it is essential to know how extensive and fatal a disease smallpox was. We have accurate records of the number of smallpox deaths in the city of London from about the middle of the seventeenth century to the present time. The London Bills of Mortality show that in the eighteenth century, London, with a population varying between 500,000 and 750,000 had approximately 10,000 cases of smallpox a year. About one-fifth or one-sixth of the persons attacked succumbed to the disease. In 1721, the practice of inoculation of smallpox was introduced into England by Lady Wortley Montague.

The opponents of vaccination contend that the decline of smallpox mortality, which was noted in practically all countries about the beginning of the nineteenth century, was not due to the introduction of vaccination but to the discontinuance of inoculation. They claim that the smallpox death rate was increased throughout the eighteenth century by inoculation. Statistics show, however, that smallpox caused about one-twelfth of all deaths in the beginning of the eighteenth century before inoculation was introduced, and one-eleventh of all deaths toward the end of the century. So that the mortality from smallpox did not in any marked degree differ in the two periods. Smallpox was constantly increasing from the middle of the seventeenth century up to 1720, with no such factor as inoculation to account for it. It must be admitted that inoculation did tend to perpetuate smallpox, because inoculated smallpox, while saving the lives of thousands who were subjected to this procedure, could be readily caught in the ordinary way by those who were unprotected. Only one person in about a hundred would die of inoculated smallpox. As every one felt that he would have to suffer from smallpox at one or another period of his life, it was deemed desirable to take a small risk in order to be saved from a much greater peril.

Inoculated smallpox had two effects: It caused an enormous saving of life among those who were inoculated; it tended also to disseminate the disease. There were, therefore, two factors operative which practically neutralized each other as far as the influence of smallpox mortality was concerned. In every civilized country we note at the beginning of the eighteenth century a decline in smallpox mortality coincident with the introduction of vaccination.

I might remark, as indicating the prevalence of smallpox in the pre-vaccination era, that in certain cities and towns at various times, smallpox was so prevalent that 85 to 90 per cent of the people passed through the disease at some period of their lives.

It has been repeatedly urged by the antivaccinists that smallpox occurs among

*An address before the Philadelphia Branch of the American Pharmaceutical Association, May 7, 1912.

the vaccinated: no one claims at the present day that a single vaccination in infancy will in the majority of cases protect against smallpox for life; exceptionally, however, this does occur. On an average, vaccination will protect for a period of seven to ten years. A successful revaccination at the end of this time usually confers protection for life.

Shortly after Jenner announced the discovery of vaccination, the procedure was taken up, among others, by Dr. Woodville, the physician in charge of the London smallpox hospital. He employed it upon persons in the hospital, and it was subsequently found that some of those vaccinated at the same time contracted smallpox through the air. Much of this virus was sent out as vaccine virus and gave rise to inoculated smallpox. Dr. Crookshank, of England, the most scientific of the opponents of vaccination, has advanced the view that practically all of the virus sent broadcast by Jenner was in reality an attenuated smallpox virus, and that the "vaccinations" performed were in reality "variola-tions," although general eruptions were not produced by the virus. I may say that eleven of the thirteen surviving members of the British Royal Commission on Vaccination in their report published in 1896, were not of this opinion.

Crookshank endeavored, by his argument, to prove that the persons who were presumably inoculated with cowpox were protected against subsequent smallpox inoculation and purposeful exposure to the disease because they had been in reality "variolated."

It is claimed by some antivaccinists that our "vaccinations" at the present day are in the main "variola-tions." There is absolutely no proof of such a contention.

Vaccine virus may be made, and is indeed sometimes so generated, by inoculating calves with smallpox virus. After it has passed through three generations of the bovine species, it is completely and permanently transmuted into vaccine virus.

Now we come to an argument which is advanced by some of the most radical of the opponents of vaccination, namely, that vaccination actually spreads smallpox; this is based upon the assumption that vaccine virus which may originally have been derived from smallpox, may through some particular susceptibility of the subject vaccinated, revert back to its original nature and produce smallpox. This is an entirely gratuitous assumption which is made without any basis in fact. I need only mention the fact that variola-vaccine (i. e., lymph of smallpox ancestry) has been used more extensively in Germany than in any other country. Of all the great countries of the world, Germany is the one which has had the least smallpox during the past twenty-one years.

The two main arguments of the opponents of vaccination are that vaccination does not protect against smallpox, and that it is injurious. A study of the statistics of the protective influence of vaccination against smallpox during the past century leads convincingly to the conclusion that vaccination does protect against smallpox. Time will not permit me to discuss this subject at length, but I can not refrain from mentioning the case with regard to Germany. Since 1875, Germany has had compulsory vaccination in infancy and compulsory revaccination at the age of twelve, with a third vaccination among the men who enter the army. There is no country in the world at the present time where

vaccination is so thoroughly carried out. Not only has Germany a vaccination law as ideal as can be framed, but there is, moreover, a most thorough administration of the law. This does not mean that there are not thousands of unvaccinated people in Germany; there are always some thousands of children who are below the age of vaccination. There are those postponements of vaccination due to physical disability. Nevertheless, if we consult official publications, we find that in the twenty years between 1889 and 1908, England and Wales have had about eight times as great a smallpox mortality as Germany.

In proportion to the population of the two countries, we find that England and Wales have had $13\frac{1}{2}$ times as many smallpox deaths as Germany. England has a vaccination law requiring only vaccination in infancy, and this law has been greatly weakened in its effect by exemptions under the "conscience clause." The discrepancy is still all the more remarkable considering the wonderful natural isolation of England and the exposed position of Germany, surrounded, as she is, by countries in which smallpox is very prevalent. Russia, for instance, in 60 to 70 millions of her population has 39,000 deaths annually from smallpox. Germany has a population today of over sixty-four millions and averages about 53 smallpox deaths a year. It is asserted by the opponents of vaccination that the hygienic and sanitary conditions in Germany are better than those in England. The proof that this statement is false is evident from the comparative general death rates of the two countries. England has and has always had a considerably lower general death rate than Germany, so that whereas the general death rate from all diseases is higher in Germany than it is in England and Wales, the smallpox death rate is infinitely lower.

It is asserted by the opponents of vaccination that sanitation is responsible for the general decrease in smallpox. No one here would attempt to deny that sanitation plays a part in the decrease of all infectious diseases. But we insist that such sanitary reforms as improvement in water supply, in drainage, in ventilation, etc., have little or nothing to do with the prevalence of smallpox.

Personal susceptibility is the dominant factor. Such sanitary measures as the prompt isolation of the patient, expeditious quarantine of those who have been in contact, and subsequent disinfection of premises must exert an important influence upon the limitation of the spread of smallpox, and is, of course, practiced by all vigilant health services.

The other main argument against vaccination is that it is injurious. It is held that the best protection against disease is health and that to inoculate any disease into the system is a blunder. As a pure academic proposition, this hypothesis seems reasonable, but when we find as an actual matter of experience that the inoculation of the system with a mild disease which produces an absolutely insignificant mortality confers protection against a loathsome disease which kills, disfigures and causes blindness, we would exhibit but little intelligence if we did not accept the benefits of such a procedure. When smallpox prevails, people become panic stricken and rush to be vaccinated.

It has been urged that vaccination has caused syphilis. It is admitted that arm-to-arm vaccination with humanized virus has, in extremely rare instances, transmitted syphilis from one child to another. With the employment of bovine

lymph, such as is universally employed in this country today, such an argument loses all force, inasmuch as the bovine is not susceptible to syphilis. It has been urged that tuberculosis may be disseminated by the use of bovine lymph. This is another of the gratuitous assumptions of the opponents of vaccination. Not only is tuberculosis of the greatest rarity in young calves, but they are thoroughly tested with tuberculin before being used. Furthermore, the calf is autopsied before the lymph is placed upon the market. Even if tubercle bacilli were intentionally placed in the lymph, they would be destroyed by the glycerin, as has been proven by S. Monckton Copeman, of England. Finally, if tubercle bacilli were actually inoculated on the skin of a person, nothing more would result in the vast majority of cases, than a local skin affection.

It is urged by the opponents of vaccination that tetanus is commonly introduced with vaccine lymph. I can not go into a detailed discussion of this allegation. I merely wish to call attention to the statement made by Dr. Elgin that some 5,800 tests have been made without any tetanus organisms having been found. I believe very strongly that nearly all, if not all cases of tetanus occurring after vaccination, have been due to accidental inoculation of the site of vaccination as a result of uncleanness and maltreatment of the wound. These accidents will doubtless be prevented as improved technic is brought about.

The statistics of the Philippines within recent years with relation to vaccination and smallpox are most enlightening. Millions of vaccinations have been performed in the Philippine Islands by the United States authorities, with the result that smallpox mortality has been enormously reduced and the disease in many localities completely stamped out.

In conclusion, permit me to quote from a letter sent to Jenner in 1806 by Thomas Jefferson, then President of the United States: "You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you lived. Future nations will know by history only that the dreaded smallpox has existed and by you has been extirpated." I may say that this prediction only fails of being a prophecy because vaccination and revaccination are not universally employed throughout the land.

DISCUSSION.

PROFESSOR MACFARLAND: "I have just one single thought which bears somewhat indirectly on the whole subject and yet calls to mind certain facts that many people seem to forget in this matter of explanation of the contamination of smallpox depending upon sanitary conditions.

"I wonder how many people are perfectly acquainted with the housing conditions of Philadelphia. I was very much surprised myself, although I knew they were not what they should be, after a talk with Dr. Abbott of the University of Pennsylvania upon this subject some time ago. I knew that many houses in Philadelphia were old, I knew in my own family there were houses that had been built by my great grandfather, and that these houses at the present time are in about the same conditions they were then, but it did not occur to me until I talked with Dr. Abbott that what was true of these old houses in Philadelphia is true of more than forty thousand other houses which at the present time are in precisely the same conditions they were from 75 to 125 years ago. There are 40,000 (?) houses in Philadelphia that have no sewer connections, that have cesspools in the back yards.

"My grandfather was born in 1819, and he told me that when he was a child he was vacci-

nated, but some of his brothers who were not had smallpox. He said that in his day nobody paid very much attention to smallpox. Those people lived in the same houses and in very much the same way in which people live today, so that if there were better hygiene, it cannot be the method of living; if it were better drainage, it cannot apply. If it referred to the number of people in the houses it would not apply, because the number of people in these old houses is in excess of what it was."

DR. WADSWORTH: "The pharmacist comes in contact with the people in a very peculiar way. The pharmacist should understand this is a very serious matter. Is it the duty of a sane man, and I am not talking to any others, to sit down and deny such facts? It is our business as sane, intelligent members of this community to say, if there is a mistake here or a mistake there which brings a danger to a good thing, let us go after that danger, but don't let us block the wheels of progress."

"You asked me about my experience. I do everything I can to investigate matters, and if I can find any mistake, I am going to find it. I have been sent out on a number of these cases of tetanus. I don't think I have been unfair, but when I find a child vaccinated on a certain day, gets along nicely, and the child not being particularly healthy is sent to the country, goes up on the hills, plays out in the yard, gets dirt on the vaccination scab, and two days after that develops a pus infection of the arm, then ten days after that develops tetanus."

"It takes me two weeks of hard digging to find out the facts, but when I find them, I am rather inclined to believe that this is a dirt infection."

"Whenever I have a chance, I stand up and say keep dirt out of vaccination wounds. Don't get hysterical when you are doing the work of the community or when you are thinking for yourself, but use your common sound sense and say, keep dirt out of vaccination wounds. If that one had been protected as an open wound as it should have been, the chances are that the child would not have got tetanus."

"There is another argument which has been brought up in regard to vaccination, that you should not use animals for experimentation. But when a race that has been supposed to be Christian and follows the lead of the Master who said that not one sparrow falls to the ground that your Heavenly Father does not know it, ye are of more value than many sparrows—you have your religious doctrine for it and it is the finest expression for vivisection that has ever been put in any platform anywhere."

"There is only one thought I want to add further and that is that as far as possible you keep a record of the packages of vaccine lymph sold; and to whom delivered, so that we may eliminate the undesirable features. Then if there has been a mistake, we can go through it and have it corrected. There is nobody more anxious than the straightforward manufacturer to have every error corrected, and he will meet you more than half way and lay his books before you, if you will help in this way by registering every bit of lymph you have come in. It is not much work for you and it helps materially in the investigation."

DR. ROYER: "I am specially glad to hear the splendid lecture by Dr. Elgin and to hear Dr. Hitchens on the preparation of vaccines, but I was more impressed by the importance attached to the proper storage of vaccine virus by Dr. Cliffe, than by the earlier papers in the evening, because I think that is a point where pharmacists very often fail, and we can't impress upon them too strongly that vaccine virus must be stored in a cool place. In fact, I think the producers are a little at fault in this way. They should stamp on every package they ship to pharmacists that this product is perishable unless stored in a refrigerator, because I am sure many pharmacists have not grasped fully the importance of storing vaccine virus in a proper place."

"The first thing I do in going into a pharmacy for vaccine is to find where that virus was stored. It is absolutely essential because you may get virus that has not been properly stored and is no longer active. You give that poor unfortunate individual a false sense of security. Many of the failures, most of them I think, are due just to that sort of thing—bad storage of virus—and it is especially important in the two seasons of the year,—in the winter season when your drug store is superheated and during the hot season."

"I have had an opportunity of testing out the virus of nearly all the large manufacturers of the country. I perhaps have vaccinated under my personal supervision between six and

seven thousand people, most of them children, and I have yet to see the bad results that are reported by those who oppose vaccination.

"Anyone who has seen the effect of vaccination, as a worker in a smallpox hospital, cannot but be convinced that vaccination ought to be practiced everywhere."

DR. ROUSSELL: "The preparation of the arm for vaccination is an important point. The use of antiseptic solutions on the arm improperly cleansed with water will prevent the action of the vaccine. I find out, after considerable experience, and also teach my class, no matter what antiseptic they use, be careful to see that you have afterwards washed off any remains of it.

"I would like to call attention to the advantage of the European method of vaccinating at two or three or more points. I am quite satisfied that the use of a single vaccination may be effective in most cases, occasionally it would seem that a successful vaccination has been followed, within a comparatively short time, by smallpox. That is possibly in two or three cases.

"More often very sore arms are simply proof of infection and not of successful vaccination. The vaccination has to go through a regular course, in order to insure a perfectly successful vaccination, and physicians may be misled by accepting large inflammation as proof of a successful vaccination."

DR. WELCH: "Referring to the statement I made in reference to vaccination in the Philippines, I would say that while we did clean up these towns in addition to the vaccination, when I returned to the town after a few years the sanitary conditions were the same as they had been before, but there was no smallpox.

"In reference to smallpox in the army in the Philippines, there were several reasons; in the first place, smallpox follows an army. In the United States army in the Philippines, there were a great many men who had not been vaccinated. These men were volunteers. We also discovered, as I told this gentleman a short time ago, that the vaccine virus was found inert on account of climatic conditions. It had been used for quite a while before they discovered that fact.

"I would also say in reference to Japan, that the laws were not enforced for a long time."

PARCELS POST AND A MAIL-ORDER TRUST.

Advocates of Parcels Post have been calling wholesale and retail merchants parasites upon our economic system. Edward B. Moon, Secretary of the American League of Associations, demonstrated that the wholesaler enabled the manufacturer to use capital in production which otherwise he must employ in marketing his products that the wholesaler by taking a consignment of manufactured goods frequently finances a meritorious struggling industry; and that his extension of credits to the retailer enables the retailer to credit his patrons. To bring the country suddenly to a cash basis, necessary if concentrated in great retail mail-order centers, would work hardship. He showed that the profits of these retail mail-order houses were usually greater than those of wholesaler and retailer combined and that, if present methods of trade distribution were destroyed through Parcels Post, the country might look for a trust of great retail mail-order houses.

Congressman Hill of Connecticut says: "If Parcels Post be established, the yearly deficit on that would be one hundred and fifty million dollars. Yet the advocates of parcels post will not compromise. They don't want to experiment; they want to go to the limit."—*Rocky Mountain Druggist*.

Section on Scientific Papers

Papers Presented at the Fifty-Ninth Convention

PHYSIOLOGICAL DRUG TESTING AND THE PHARMACOPOEIA.

CHAS. C. HASKELL, A. B., MD.

The chemical assay of aconite, cannabis indica, ergot, and the "heart tonics" is not practicable. In view of the great importance of some of these drugs, the attempt has been made to standardize them by tests upon the lower animals. That methods of physiological drug testing are of undoubted value is generally admitted, but that by these methods sufficient accuracy is secured to warrant their adoption as official methods of assay is not so universally believed. It has seemed to me that a discussion of physiological assaying as related to the Pharmacopoeia is particularly appropriate at this time.

Roughly, the methods of physiological testing of drugs may be divided into two classes. In the first of these, a determination is made of the amount of drug necessary to cause the death of an animal; in other words, we endeavor to ascertain the killing power of the particular drug. In the second class, the attempt is made to measure the effect of the drug upon the function of living tissue.

It would seem, on theoretical grounds, that the methods based upon the determination of the lethal dose are less likely to give reliable results than are those methods where the attempt is made to measure some peculiar physiological action of a drug; some action which has been shown clinically to be of therapeutic value. If, however, it is proven that the lethal action is always due to the therapeutically active principles and that the action is always upon the same vital centers, then this theoretical objection is removed. Until then, however, as has already been pointed out, simply because one specimen of drug is twice as poisonous as a second gives us no reason for assuming that the former is twice as active therapeutically as the latter.

The prime requisite for any method of assay is, of course, accuracy. The degree of accuracy being the same, methods showing cheapness, simplicity and rapidity are to be preferred and it will be of value for us to keep these points constantly in mind.

For the assay of aconite, two methods have been proposed. The first of these belongs to class two of the arbitrary division, and depends upon the fact that aconite has the property of so stimulating sensory nerve terminals as to cause a tingling sensation. Dr. Squibb endeavored to learn at how great dilution an aconite preparation was still capable of causing this sensory reaction when the solution was held in the mouth.

The other method is simply a lethal dose method; guinea pigs, frogs or other animals being used in the experiments.

Dr. Squibb's method is unsatisfactory because the personal equation is apt to influence the results. A very weak solution and a strong imagination will enable one observer to experience the same tingling that a second would experience with a stronger solution and a less active imagination.

The lethal dose method has also not been carefully enough studied to prove its reliability, so an intelligent discussion is not practicable.

So far as I am aware, the only assay method for cannabis indica is that proposed by Dr. Houghton, or some modification of Dr. Houghton's method. In sufficiently large dose, cannabis indica is capable of causing intoxication in a dog, first evidenced by a swaying from side to side when the animal stands. By determining the amount of the drug necessary to cause the first evidence of intoxication, it is claimed that fairly accurate results can be secured.

The personal equation of the observer is again a factor to be reckoned with. What constitutes the first symptoms of intoxication? One may select the slightest swaying, in which event a normal dog may often deceive him; another observer may demand very marked evidences, for which a much larger dose is required. Moreover, the reaction of the dogs is apt to vary, from the fact that minimal exciting doses are given, these small doses being more apt to bring out individual peculiarities than are large ones. It is also true that accurate standardization of cannabis indica is not as essential as it is in the case with some other drugs, owing to the low toxicity of cannabis and the number of efficient substitutes that we have.

In ergot we have a drug of great value and one of such complex character that the chemical assay will probably never be satisfactory. Keller's method was formerly believed accurate, but the consensus of opinion seems that the results secured by the determination of the "cornutin" are not to be relied upon. The method proposed recently by Dr. Wood has also been found wanting, and we are forced to turn to physiological tests.

All of the methods now commonly used for the physiological assay of ergot are based upon attempts to measure directly the therapeutic action of the drug as shown by its effect upon the function of the lower animals or upon their excised organs. The cock's-comb method, which owes its prominence to Dr. Houghton, depends upon the power of most fresh ergot preparations to cause, when administered to a chicken, changes in the comb which may be so pronounced as to result in gangrene. It was formerly believed that this effect upon the comb was due to the vaso-constrictor action of ergot, but this view has recently been questioned. If, as Ellinger claims, identical changes can be produced by cantharidin, it is evident that the action can not be considered characteristic of ergot, and the method can be thought reliable only when it has been shown by careful clinical tests that this gangrene-producing power of ergot as measured on the chicken runs parallel with the therapeutic activity of the drug. The work of Edmunds and Hale, showing the agreement between the cock's comb test and the test upon the uterus of one of the lower animals is very suggestive.

The cock's comb test has been adversely criticized, but it would seem that in

some instances the poor results were due not so much to weakness of the method as to faulty technic. In our laboratory we aim to use fowls of the same breed and of as near the same age and weight as is practicable. The drug, in the form of a fluidextract, is injected into the pectoral muscles or into one of the wing veins. If the fowls are picked up at random and not kept under precisely similar conditions, accuracy can not be hoped for. It has seemed to us, also, that the oral administration of ergot to chickens is objectionable, because certain of the active constituents are not supposed to be absorbed from the gastro-intestinal canal.

It is certainly true that the reaction not being automatically recorded is a serious disadvantage. Here, as in some of the other tests I have mentioned, the individual bias of the observer is apt to interfere with accuracy, and the results secured by different men may differ widely owing to the different degrees of reaction aimed at.

Some years ago, Dixon proposed that the vaso-constrictor action of ergot, as evidenced by the rise in the blood pressure of a mammal, be made use of in the attempt to standardize ergot preparation. This method has been extensively used in England, but seems to have at least two serious disadvantages. In the first place, it has been shown (Goodall, Dale, Edmunds and Hale) that the effect upon the blood pressure and upon the uterus *are not always parallel*. So far as I can learn, there is no experimental evidence for supposing that the two sets of effects (upon the blood pressure and upon the uterus) are part of a widespread general action of the drug, and the assumption that vaso-constrictor action is an index of the potency of uterine action is not justified. Dale and Laidlaw have pointed out that B-iminazolyethylamine, one of the constituents of ergot, causes tetanic uterine contraction with a coincident fall in blood pressure.

Even were this method to represent a measure of the therapeutic value of ergot, it does not seem practicable to secure an accurate measure by means of it. Unlike adrenalin, ergot, in an amount large enough to produce an appreciable rise of blood pressure, has a very lasting effect and it is not practicable to make more than one injection into the same animal for purpose of comparison. If the same preparation be given to a number of different animals, it is apparent that these different animals will show great differences in the blood-pressure effects.

Finally, there are the two methods in which the effect of ergot upon the uterus itself is observed. In Kehrer's procedure, the organ is excised and the ergot, in solution brought into contact with it. In the method advocated by Dr. Edmunds, the movements of the uterus of a cat are observed by means of opening the abdomen of an anaesthetized animal in salt solution, the drug being injected intravenously.

There are several points which seem to render these methods undesirable. In the first place, both methods are technically rather difficult. Again, it is claimed that the condition of the uterus as regards parturition influences the reaction to ergot. Certain of the active constituents isolated by Barger stimulate the

parturient, but inhibit the virgin uterus. Then spontaneous movements often set up and cease from some unknown cause.

The most important drug on our list is digitalis. The fact that digitalis is so widely used and that variations in strength on either side of a mean is liable to have disastrous consequences renders it extremely desirable to secure some means of standardizing the medicinal preparations of this drug. A discussion of digitalis would also include apocynum, convallaria, strophanthus, and squill, since there is at present no satisfactory chemical assay for any of these.

The lethal dose method for testing digitalis was the first method to be employed commercially in attempting to standardize drugs by pharmacological experiments. To Dr. Houghton belongs the credit for this important step, which he took when he devised his 12-hour frog method for the assay of the heart tonics. This method is based upon the determination of the lethal dose of digitalis for frogs.

Dr. Houghton had also used guinea pigs in standardizing the heart tonics, but found them unsatisfactory. Dr. Reed, however, believed more accurate results could be secured by using guinea pigs rather than frogs.

Dr. Hatcher recently announced his cat method, by which he claimed great accuracy could be obtained, while, at the same time he considers the method to be simple and cheap.

I have already mentioned briefly a possible source of error is testing a drug by lethal dose methods. Does the therapeutic value of digitalis run parallel with its toxicity for lower animals? Is, as has been claimed, this lethal action of digitalis upon a guinea pig or a cat simply an exaggeration of the therapeutic action of the drug, the poisoning of the heart being the cause of death? Dr. Reed, Dr. Githens, Dr. Hatcher, all claim this to be the case. Cushny, on the other hand, states that even the glucosides of therapeutic value act largely upon the central nervous system; while Edmunds and Hale believe that the death of mammals after digitalis poisoning sometimes results from failure of the heart; sometimes from failure of the respiration. Nestor has come to the conclusion that death of rabbits from the lethal action of the glucosides is always due to respiratory failure, and, in some instances, he was able to save animals from the "dose always fatal" by the maintenance of artificial respiration. From a few experiments upon guinea pigs, I have always found the heart beating strongly after complete cessation of respiration and apparent death of the animal. In a series of experiments carried out in our laboratory by Mr. Eckler, using Dr. Hatcher's method, the respiratory movements of the cats were continued after apparent cessation of the heart beat, but the respiration was often seriously embarrassed before any appearances of cardiac failure. When "pure principles" are used, it is probable that the death of frogs results from cardiac poisoning, and, consequently, this method would represent a measure of the therapeutic action of such pure principles.

If we could assume that it was the bodies of therapeutic value alone that caused the death of the animal, it would not be so important how death was caused, provided there was shown to be a constancy in the dosage required. But in the Galenical preparations of digitalis we have very complex mixtures.

Suppose, as Dr. Hale pointed out, there should be a relative excess of digitonin present in a tincture of digitalis. Owing to the lethal action of this glucoside, very misleading results would be obtained by using a lethal dose method, and a preparation not only therapeutically weak, but capable of causing serious harm if used clinically might be considered of good strength.

On theoretical grounds, Dr. Cushny's frog heart method seems to avoid these objectionable features. This is a qualitative test of undoubted value, for I do not know of any substances present in digitalis leaves capable of producing the typical "digitalis heart" except the glucosides of the heart tonic series which are of value therapeutically. Even could we measure accurately the toxicity of digitalis for lower animals, it can not be claimed that we are always sure of measuring the therapeutic activity of the drug, for not only may a relative excess of the undesirable digitonin be present, but it is possible that injuriously acting decomposition products may arise with the aging or manipulation of a preparation, and it is certainly conceivable that as a tincture ages and deteriorates, it may increase in toxicity for mammals and at the same time not only lose in therapeutic efficiency but actually acquire an increasing power to do harm if used clinically. By observing the action on the frog's heart, we gain positive information concerning the desired glucosides, for they alone, so far as I can learn, are capable of bringing about the characteristic changes in the heart. Focke's method also possesses this advantage, but the barbarity it necessitates will prevent its adoption. The perfusion of the isolated heart involves a complicated technic and can not be considered very accurate.

It has been urged that the frogs vary markedly in their reaction to digitalis, but from my limited experience, I can agree with Hale and Focke that the unsatisfactory results secured are rather due to lack of care on the part of the operator than to unfitness of frogs. When we see the concordant results of Fannulener and Lyons and Hale we can not but feel that the method of Cushny is accurate. It may be of interest to state that with ouabain, a pure substance, the same results were secured in Dr. Houghton's laboratory and ours, these results being obtained in each place without knowledge of the work in the other laboratory. To eliminate the possibility of variations due to season or locality, a definite chemical compound, such as strophanthin, suggested by Dr. Houghton, or, preferably, ouabain may be used, and the frogs themselves "standardized."

On the other hand, some authorities would have us think that mammals do not show appreciable individual variation. In the hands of Dr. Hatcher, remarkably uniform results were secured in the early work with his cat method, but he has recently reported an error of 50%+.

I have been unable to find the report of any very satisfactory evidence showing that guinea pigs react uniformly to digitalis regardless of age, weight, sex, season and diet. It would seem advisable to publish such evidence in view of the marked variation sometimes shown by guinea pigs in their resistance to bacterial poisons and the interesting experiments by Dr. Hunt, showing the effect of different diets on the resistance of guinea pigs to poisoning by acetonitrile.

Dr. Houghton has, I believe, found his method involves an error less than

10%. Using "pure principles" Hale has found the one hour method fully as accurate as this. In our own laboratory we have made our work, carried out independently, check within 10%.

There can be no question as to the economy of the different methods. Frogs for an assay cost us about 50 cents. Guinea pigs would cost us about \$4.00. Cats could not be secured in Indianapolis in sufficient numbers for our use.

As regards simplicity, there is little to choose between Houghton's and Cushny's method. The guinea pig can not be handled by one man; while Hatcher's method is quite complicated.

The one hour frog method enables us to complete an assay in, at most, three hours. Houghton's method requires at least 24 hours, as does the guinea pig method. The actual time needed to run one cat, according to Hatcher's method, is 90 minutes. If, as seems necessary, three animals are used, the whole day is taken up, the preparation of the animals requiring some time.

Accuracy, cheapness, simplicity, speed. It would seem that in none of these points is Cushny's method excelled. Houghton's method is more time consuming, and it is conceivable that it may give erroneous results when other poisons besides the active glucosides are present in large amount.

It seems that the frog heart method is the only one that has been controlled clinically. Pratt, in this country, has shown how the therapeutic efficiency of digitalis leaves varied as did their strength as determined by this method. Focke, also, mentions similar comparisons. The worth of digipuratum, which is standardized by a modification of Cushny's method, has been shown by many clinical tests.

In conclusion, it may be said that in the one hour frog heart method is offered a means of standardizing digitalis which compares favorably with chemical assay methods when the test is carried out with due precautions by trained men.

It would probably be unwise to adopt as official any of the methods now used for the pharmacological assay of aconite, cannabis indica, or ergot. Further study is needed before it can be determined which are most suitable, but in the meantime it is very desirable that manufacturers use these methods, thereby insuring more nearly uniform preparations and also acquiring valuable data upon the methods used.

ELI LILLY & CO. PHARMACOLOGICAL LABORATORY, July 9, 1911.

VARIATION IN THE SUSCEPTIBILITY OF THE GUINEA PIG TO THE HEART TONIC GROUP.

CHAS. E. VANDERKLEED.

Pharmacologists are divided in their opinion as to the best method for determining the strength of preparations of the digitalis series by biologic means. Many papers have appeared during the last few years advocating the use of this or of that method, but a careful review of the literature shows that, in the opinion of

the majority of the workers, the question narrows down to a choice between one of the frog methods and the guinea pig method of Reed and Vanderkleed. Hatcher's proposed cat method has apparently gained no additional supporters, undoubtedly because of the complexity of its technique.

It is not the purpose of this short communication to discuss all of the many phases and problems of biologic standardization. Attention is called, however, to the fact that the frog method and the guinea pig method are both toxic or lethal dose methods, and hence, to this extent at least, are amenable to comparison. The question of the effect of the heart tonic drugs on the respiration, in the case of guinea pigs, has been offered as one of the objections to the employment of these animals for the biologic assay of these drugs. This problem has been the subject of an extensive series of experiments during the past summer by Dr. L. T. De M. Sajous, consulting pharmacologist of the H. K. Mulford Company, who will report on this subject during the course of the next few months. He has authorized me to say, however, that in the course of his work, by means of artificial respiration, he was able at most only to prolong the life of a guinea pig to which had been administered a minimum lethal dose of tincture of digitalis for from 30 to 40 minutes. Such being the case, he believes that the effects of digitalis on the respiration in the case of guinea pigs does not materially affect the results obtained by the lethal dose method.

The most important contrast between frogs and guinea pigs as test animals lies in the claim by advocates of the latter that the susceptibility of the guinea pig, unlike that of the frog, does not vary or does not vary so greatly with climate, temperature, food, season, weight and sex. That frogs do so vary is admitted by the advocates for their employment, as shown by the suggestion by Houghton that crystallized strophanthin be employed as a standard for checking the susceptibility of each lot of frogs employed in the standardization of a preparation of unknown strength. (See also Hygienic Laboratory Bulletins Nos. 48 and 74, by Edmunds and Hale.) On the other hand, Haskell¹ has recently claimed that the advocates of the guinea pig method have only half-heartedly claimed that guinea pigs do not show the same variations. Thus he quotes Reed as saying that the guinea pig "does not *appear* to offer so wide a variation"; Githins as saying that the guinea pig "*shows* no such variation"; and the Philadelphia committee on pharmacologic assay as stating that the susceptibility of guinea pigs to digitalis does not vary under ordinary conditions, "*so far as is known*." The effect of Haskell's quotations is to create the impression that these advocates of the guinea pig as a test animal were not all *convinced* of the superiority of the guinea pig over the frog in this respect, and he goes on to show the possibility of a great variation in the susceptibility of guinea pigs, *to digitalis*, by mentioning an article by Arms² entitled "Some Freak Results from Animal Inoculation," in which that author reported on the effects of inoculations of guinea pigs with glanders and with emulsion of nervous tissue from rabid dogs! The irrelevancy of such experiments to the question at issue only

¹American Journal of Pharmacy, May, 1911, p. 201.

²Journal of Public Hygiene, XIX No.3.

seems to indicate an *a priori* prejudice against the employment of the guinea pig. Haskell's further observation that the advocates of the guinea pig method have put forth unusual efforts to discover defects from the unfitness of the frog, seems to be paralleled by his implied unfitness of the former animal.

Taking up the objections to lethal dose methods in general, Haskell further states that "the active glucosides of digitalis may become decomposed into such bodies as digitalresin and toxiresin, which, resembling picrotoxin, have a depressant action on the heart, and a preparation containing a large amount of such decomposition products, while testing high by lethal dose methods, might not only be below standard, but capable of causing dangerous poisoning." In support of this possibility he quotes Edmunds and Hale in their Bulletin No. 48 of the U. S. Public Health and Marine Hospital Service, as follows: "One solution might be very weak in its action upon the heart and yet contain decomposition products of digitalis whose typical action is upon the medulla, and it would, therefore, appear unduly strong when judged by such a standard. For this reason, we think that methods which employ as a standard the minimum lethal dose upon the higher animals are not applicable to the physiological assay of the digitalis series."

In this bulletin, however, these authors offer no evidence to show that such a condition ever obtains; on the contrary, a study of their experiments shows that they observed cases in which preparations containing large amounts of decomposition products and producing but a small or even negative rise in blood pressure, were administered in doses four times as great as the minimum lethal dose of an active preparation without causing any symptoms whatever in guinea pigs, and they observed other cases in which such preparations were injected in doses eleven times as great as the minimum lethal dose of an active preparation without causing death. This objection to lethal dose methods, therefore, does not seem to be sustained, or at least remains to be proved. Moreover, if the minimum lethal dose method be checked by a chemical assay for digitoxin, an additional safeguard against the possibility of wrong interpretation of the physiological results is provided.

Haskell, however, goes on to say, "Doubtless, numerous investigations have been carried out to show that guinea pigs do not vary in their resistance to digitalis intoxication, but I have been unable to find the report of a single series of experiments performed with the object of showing that guinea pigs are not fully as much influenced by adventitious circumstances as are frogs." This, being a perfectly rational and legitimate challenge, I shall endeavor to answer it, first, from a review of records of some hundreds of experiments started in July, 1911, and so planned as to cover one complete revolution of the seasons. The complete report of this series of experiments can, of course, only be given twelve months hence—but some preliminary data have already been collected and may be of interest here.

Reverting to the records of guinea pig injections above referred to, I would state that the conclusions as guardedly expressed, and properly so as becomes scientific investigators, by Reed, Githens, and the Philadelphia Committee, were based upon the fact that, in the course of hundreds of injections, *apparent*

variations in susceptibility were so few as to be, on the whole, negligible. In these experiments, guinea pigs bred and raised by no less than a dozen different breeders were employed. The pigs, once aggregated from these various sources, were, of course, subjected to approximately the same general conditions, but no unusual means of preserving uniformity were employed. Seasonable food was given them, principally oats and hay, together with greens, such as lettuce, carrot tops, corn stalks, cabbage, etc., in season. The temperature change to which they were subjected was that of Philadelphia, which, as is well known, is a considerable one. In Winter, the general guinea pig quarters are heated to 65 or 70° F., while the rooms into which they are transferred during the time of testing are heated to about 75° F. Thus, no *particular* attention is paid to the question of source, food, or temperature, nor, in the hundreds of injections made in our laboratories, are any selections made as to sex. The weight of the individual animals employed has ranged from 225 to 500 gm.—the dose given being always calculated on the basis of 250 gm. weight. In spite of the lack of attempting to systematize the conditions under which the animals are kept, and tested, the percentage of non-concordant results obtained has been well within 5%. By this is meant that, in finding the minimum lethal dose of any preparation, down to a variation of 10%, and in most cases much less than 10%, a series of pigs, taken at random, and given injections of progressively larger doses, *all* receiving a certain dose or more will die, and *all* receiving a smaller dose will recover. A second smaller series is always injected to check the results of the first series, and, as stated above, not five pigs in one hundred have been found to die with a smaller dose than that found as the m.l.d. in the first series, or to recover when given the same or a larger dose—the doses being increased successively in teaths.

It was upon this evidence that the guarded opinions expressed by Reed, Githens and the Philadelphia Committee were based. In addition to the above variations, another variation not heretofore brought out has been noted. As is well known, the guinea pig is the official test animal employed in the standardization of sera such as diphtheria antitoxin. That its use for this purpose leads to unquestioned uniformity of product is universally acknowledged, and officially sanctioned by the U. S. P. H. and M. H. Service. In the course of standardizing sera, large numbers of pigs survive, but can not be used again for testing sera. The question naturally arose as to whether such pigs could be used for the standardization of the heart tonics. Series of such pigs have been repeatedly used along with previously unused pigs and no change in the susceptibility to digitalis and the other heart tonics noted. It is only essential that they may be in good physical condition and fully recovered from the physical injury inflicted by the prior injections of toxins and antitoxin.

Taking up now the experiments started in July, I would state that the principal advantage of the guinea pig over the frog lies in the claimed non-necessity for employing and keeping on hand a "standard" against which the susceptibility of the animals must be checked. If this advantage can not be sustained, the guinea pig method loses one of its more important claims to superiority, although it possesses some other advantages over the frog which in turn are met with

certain minor disadvantages, such, for example, as that of cost. Confining ourselves, however, to the main question at issue, I will outline the nature of the experiment being conducted, and give a summary of results so far obtained.

The experiment has been undertaken to show what effect, if any, season (and, incidentally, temperature), food, weight and sex has upon the susceptibility of the guinea pig to digitalis intoxication. Recognizing the difficulty and uncertainty of keeping a standard digitalis absolutely unchanged throughout one year (and any whatever would, of course, nullify the value of the experiment), I have adopted as the standard preparation to be employed, crystallized ouabain, which has been selected by the advocates of the frog methods for the purpose of standardizing their test animals.

The experimental pigs have been divided first into two classes, as regards sex—male and female. Each of these classes has been further subdivided into two classes as regards weight—those ranging from 225 to 275 gm., and those ranging from 350 to 500 gm.

Each of these sub-classes was at first further subdivided into two classes as regards food—one class receiving for two weeks prior to the test, nothing but oats—the other class receiving during the same time nothing but greens. It was soon discovered, however, that the pigs receiving nothing but greens easily succumbed to the unusually torrid weather which prevailed in Philadelphia and in many other parts of the country during July. Greens alone appeared to possess an insufficient amount of nourishment to maintain the animals in healthy physical condition—several deaths occurring in the cages.

The differentiation as regards food was, therefore, discontinued, the fact having been proved to us that test pigs must be fed upon grain (oats) as well as upon greens in season, and that the grain is the more important. This fact, however, does not in itself discredit the guinea pig as a test animal, since we are limited very much in any case in the variety of foods which this animal will eat.

A further important observation was made during this exceedingly hot month of July. We discovered that a factor of more importance than temperature on the health of the guinea pigs is ventilation—fresh air. Our main supply of pigs is kept under conditions already described in the country. For the purpose of making these and other tests, the pigs are brought into the city, where the problem of housing and ventilation is a more difficult one. During the July fourth vacation several deaths occurred in the cages, particularly among the pigs fed on greens, and it was found that these were in fact caused by the partial lowering of the windows in their quarters by the attendant during this period, as a precaution against fire from rockets, etc. However, all this only goes to show what all pharmacologists concede, that in any biologic assay whatever, normal, healthy test animals are the first requisite.

The seasonal variations will, of course, be shown by any differences in results noted during the year. Tests are to be made and a new series of pigs in each of the four classes selected for the tests each month.

Thus, at the end of the year, we shall have 12 sets of experiments showing the m.l.d. or resistance to crystallized ouabain, of 4 different kinds of guinea pigs, or 48 tests, covering an entire year's variation in season and, to a certain

extent, temperature. Moreover, if found practicable, we shall have from time to time lots of pigs shipped directly to us from various sections of the country—thus introducing the factor of climate.

Up to the present time, only one set of tests has been made, the results obtained being shown in the following tables. The doses given are in grams per 250 grams body weight:

*Small Males, Weighing 140 to 210 gm.**

Dose	Weight	Result
0.000040	195	— Recovered
0.000044	200	— Recovered
0.000047	175	— Recovered
0.000050	155	— Recovered
0.000050	210	— Recovered
x 0.0000525	205	+ Died
0.000055	195	+ Died
0.0000575	190	— Died
0.000060	140	+ Died
0.000069	170	— Died
0.000072	185	+ Died

M. L. D. = 0.0000525.

Large Males, weighing 270 to 410 gm.

Dose	Weight	Result
0.0000375	285	— Recovered
0.0000400	310	— Recovered
0.0000440	410	— Recovered
0.0000470	320	— Recovered
0.0000470	305	+ Died
0.0000500	270	— Recovered
0.0000500	370	— Recovered
x 0.0000525	315	+ Died
0.0000550	310	— Died
0.0000600	345	+ Died

M. L. D. = 0.0000525.

Small Females, weighing 160 to 210 gm.

Dose	Weight	Result
0.00004	170	— Recovered
0.000044	210	— Recovered
0.000044	190	— Recovered
0.000047	160	— Recovered
0.000047	170	— Recovered
0.00005	180	— Recovered
0.00005	180	— Died
x 0.0000525	195	— Died
0.000055	175	— Died
0.0000575	180	+ Died
0.00006	160	— Died

M. L. D. = 0.0000525.

Large Females, weighing 260 to 350 gm.

Dose	Weight	Result
0.0000375	260	— Recovered
0.00004	265	— Recovered
0.00004	335	— Recovered
0.000044	295	— Recovered
0.000044	350	— Recovered
0.000047	260	— Recovered
0.000047	295	— Died
x 0.00005	350	— Died
0.00005	285	— Died
0.0000525	300	— Died
0.00006	275	— Died

M. L. D. = 0.0000500.

Thus, it may be seen that male and female pigs ranging in weight from 140 to 410 gm. have shown a minimum lethal dose of about 0.0000525 per 250 gm. body weight, in the first month's tests. Out of 43 pigs in the series only one (the large male which was killed by 0.000047 gm. per 250 gm. body weight, while two other pigs receiving 0.00005 gm. per 250 gm. body weight recovered) died "out of order."

The M. L. D. for small females was considered to be 0.0000525, because, of two pigs receiving 0.00005 gm., one died and one recovered. The M. L. D. for large females was considered to be 0.00005 because, of two pigs receiving 0.000047 gm., one died and one recovered.

The variation in results obtained from month to month will in due season be published, and I trust that they may go far toward establishing the degree of variation in the susceptibility of these little animals to the heart tonic drugs which is to be expected.

As a matter of possible interest, the minimum lethal dose of the ouabain used in the guinea-pig experiments was determined by Houghton's "one-hour" method for three classes of frogs as follows:

MALE LEOPARD FROGS (*RANA PIPIENS*) FROM ILLINOIS.

Weights ranged from 38.5 to 57.5 gm. Temperature of water in frog tank 26.5 to 29.5° C. Temperature of room 25.5 to 28.5° C. The doses given are in grams per gram body weight.

Dose	Weight	Result
0.000,000,30	42.0	— Beats.
0.000,000,31	40.0	— Occasional Beat.
x 0.000,000,32	45.5	+ Stopped. Extra Contraction on Stimulation.
x 0.000,000,32	55.0	+ Stopped. Extra Contraction on Stimulation.
x 0.000,000,32	56.5	+ Stopped. Extra Contraction on Stimulation.
x 0.000,000,32	57.5	+ Stopped. Extra Contraction on Stimulation.
0.000,000,33	42.5	+ Stopped. Extra Contraction on Stimulation.
0.000,000,34	38.4	— Non-absorption.
0.000,000,34	44.0	+ Stopped. No extra Contraction on Stimulation.
0.000,000,36	45.0	+ Stopped. No extra Contraction on Stimulation.
0.000,000,39	40.0	+ Stopped. No extra Contraction on Stimulation.

M. L. D. considered to be 0.000,000,32.

FEMALE LEOPARD FROGS (*RANA PIPIENS*) FROM ILLINOIS.

Weights ranged from 30 to 62.3 gm. Temperature of water in frog tank 26.5 to 29.5° C. Temperature of room 25.5 to 28.5° C.

Dose	Weight	Result
0.000,000,36	40.0	— Beats.
0.000,000,36	34.0	— Stopped.
0.000,000,37	34.0	— Slight beat in Auricle.
0.000,000,37	43.5	— Slight beat in Auricle.
0.000,000,37	36.0	— Beats.

0,000,000,38	37.5	— Beats.
0,000,000,38	34.0	— Beats.
x 0,000,000,38	30.0	— Stopped. Extra Contraction on Stimulation.
x 0,000,000,38	37.5	+ Stopped. Extra Contraction on Stimulation.
x 0,000,000,38	62.3	+ Stopped. No extra Contraction on Stimulation.
0,000,000,39	50.5	— Beats.
0,000,000,39	66.6	— Auricles still Contracting.
0,000,000,39	37.0	+ Stopped. Extra Contraction on Stimulation.
0,000,000,39	46.0	+ Stopped. No extra Contraction on Stimulation.
0,000,000,39	48.0	+ Stopped. No extra Contraction on Stimulation.
0,000,000,40	40.0	+ Stopped. No extra Contraction on Stimulation.

M. L. D. considered to be 0,000,000,38.

FEMALE BULLFROGS (*RANA CATESBIANA*) FROM PENNSYLVANIA.

Weights ranged from 38.5 to 54 gm. Temperature of water in frog tank 24.5 to 26.5° C. Temperature of room 24 to 25.5° C.

Dose	Weight	Result
0,000,000,36	48.2	— Beats.
0,000,000,40	41.0	— Beats.
0,000,000,45	41.0	— Beats.
0,000,000,47	43.0	— Beats.
0,000,000,50	42.0	— Auricles still Contracting.
0,000,000,51	38.5	— Auricles still Contracting.
x 0,000,000,52	39.6	— Stopped. Extra Contraction on Stimulation.
x 0,000,000,52	40.0	+ Stopped. Extra Contraction on Stimulation.
x 0,000,000,52	40.5	+ Stopped. Extra Contraction on Stimulation.
x 0,000,000,52	38.5	+ Stopped. Extra Contraction on Stimulation.
x 0,000,000,52	48.5	+ Stopped. Extra Contraction on Stimulation.
0,000,000,53	40.5	— Non-absorption.
0,000,000,53	48.0	+ Stopped. No extra Contraction on Stimulation.
0,000,000,53	54.0	+ Stopped. No extra Contraction on Stimulation.

M. L. D. considered to be 0,000,000,52.

It appears therefore that in the above experiments the minimum lethal dose for the three classes of frogs varied as follows:

Male Frogs (<i>Rana pipiens</i>) from Illinois.....	0,000,000,32
Female Frogs (<i>Rana pipiens</i>) from Illinois.....	0,000,000,38
Female Bull-frogs (<i>Rana catesbiana</i>) from Pennsylvania.....	0,000,000,52

or, the lethal dose for female frogs from Illinois was about 19% greater than for male frogs from the same locality, while the lethal dose for female bull-frogs from Pennsylvania was 62.5% greater.

In conclusion I wish to acknowledge my indebtedness to Dr. P. S. Pittenger and Mr. Leo Glickman for assistance in carrying out the experimental work.

RESEARCH LABORATORY OF THE H. K. MULFORD COMPANY, PHILADELPHIA, PA.

SUSCEPTIBILITY OF THE GUINEA PIG TO POISONING BY DIGITALIS.

A. L. WALTERS, B. S. AND C. C. HASKELL, A. B., M. D.

A method of drug assay to be suitable for an official assay process should be accurate. This point outweighs all others, and many objectionable features can be overlooked if the method in question enables us to measure accurately the therapeutic properties of the drugs examined. Nevertheless, should two methods show no appreciable difference regarding the degree of accuracy attainable, the cheapness, simplicity, and rapidity of performance come to have considerable influence in the choice between them.

The advocates of the frog methods believe that careful investigation, extending over many years in different laboratories has shown that these methods carried out upon "standardized" animals enable the pharmacologist to estimate the strength of digitalis preparations with an error not greater than 10 per cent. So far as we have been able to learn, the valid objections to the use of frogs are removed when a reliable standard, such as ouabain or Houghton's crystalline strophanthin, is used. Compared with the guinea-pig method, proposed by Dr. Reed, the frog methods are much cheaper. In the assay of digitalis preparation by the one-hour frog heart method, we practically never use more than 18 frogs, the cost of which varies from forty to seventy-five cents. Our ignorance of the routine use of the guinea-pig method prevents us from stating definitely the cost of an assay. It scarcely seems probable, however, that, on an average, less than six or eight animals would suffice. The guinea pigs we have been able to obtain have cost us from 40 to 75 cents apiece, making the probable cost of an assay from two to six dollars, about 800 per cent. greater than the frog method.

Closely connected with the cost, are the rapidity and simplicity of execution. By the one-hour frog heart method, an assay can be completed by one man in three hours at the utmost. By the guinea pig method, at least twelve hours must be consumed, and probably twenty-four. Moreover, an assistant is required in injecting the solution into the guinea pig and accuracy of dosage is more difficult to obtain. It would seem, from the investigations that we have carried out, that an alcoholic strength of 25 per cent. has no appreciable influence on the reaction of frogs to ouabain, so that removal of the alcohol from official digitalis preparations is not necessary for their assay upon frogs, since the necessary dilution accomplishes the desired reduction.

But if it be granted that the guinea-pig method is deficient in these points, is the accuracy attainable by it sufficient to counterbalance the less important considerations? Dr. Reed and Dr. Githens are convinced that this is so, and the opinions of such careful investigators is worthy of much consideration.

The question of the lethal action of digitalis upon mammals is of some interest. Dr. Githens believes that guinea pigs die as a result of the action of the drug upon the heart, all the phenomena observed being due to circulatory embarrass-

ment. It would seem advisable to adduce experimental evidence in support of a view which is denied by such men as Edmunds, Hale, Cushny, and, apparently, has been disproven for rabbits by Nestor.

This point, however, is relatively unimportant if it can be proven that the lethal power of digitalis for guinea pigs runs parallel with the therapeutic efficiency of the drug. That such parallelism exists, however, is a dangerous assumption if our knowledge concerning the chemistry of digitalis is correct. It is held that the glucosides tend to break up under certain poorly understood conditions, giving rise, probably, to numerous decomposition products, among which toxiresin and digitalresin are prominent. According to Sollman, these bodies appear to be more poisonous than the original glucosides, so it is conceivable that an old, deteriorated preparation, one that is not only therapeutically weak but capable of doing serious damage if used clinically, would seem of good strength when tested by a lethal dose method. If we are right in the assumption that the therapeutically active glucosides are the only substances present in digitalis preparations which are capable of bringing about the cardiac changes upon which the one-hour frog heart method is based, it is evident that this method, being a qualitative as well as quantitative test of digitalis, possess a great advantage over the lethal dose methods.

Aside from these theoretical considerations, what evidence is there for or against the guinea pig as a test animal? So far as we can discover, there have been no reports of experiments carried out to show that the susceptibility of guinea pigs to digitalis poisoning is constant regardless of age, weight, sex, diet, season, or locality. On the other hand, Dr. Houghton has found them less useful than frogs, and, as the result of his earlier work, he discarded guinea pigs for the latter animal in the assay of strophanthus.

While the variations in the susceptibility of guinea pigs to other poisons cannot be accepted as positive proof that similar variations will occur when digitalis is the toxic agent, yet such evidence is very suggestive.

Dr. Arms has called attention to the fact that very striking individual variations are encountered when tests are made upon guinea pigs with the virus of rabies or with material containing infectious organisms. Hunt has shown that guinea pigs vary in their susceptibility to acetonitrile according to season and diet. In January, the m. l. d. of acetonitrile per gram guinea pig was 0.20; in July, 0.45, a difference of 125 per cent. One series of pigs fed on green food survived a dose of 0.53 gm., while a second series, kept on an oats diet under similar conditions, succumbed to a m. l. d. of 0.23, a difference of 130 per cent.

Sudmersen and Gleny found that guinea pigs varied in their susceptibility to diphtheria toxin according to season and inversely as to age. In January, the approximate m. l. d. was 0.006; in July, 0.009; a variation of 50 per cent. It is worth noting that these investigators found that the animals' resisting power to diphtheria toxin was greater in summer and fall, agreeing with Hunt's results when acetonitrile was used.

If similar variations in the susceptibility of guinea pigs to digitalis poisoning should be found present, it is obvious that these animals would be suitable for

the assay of the members of the digitalis group only when a standard preparation is used on a control series of pigs, and the method would possess absolutely no advantage over the frog methods, while being much more cumbersome. In view of these facts, we have taken up the study of the susceptibility of guinea pigs to poisoning by members of the digitalis series in the attempt to learn whether this susceptibility is the same in a series of animals kept under similar conditions is uninfluenced by artificial respiration; by the weight of the animals; by the diet of the animals or by the season of the year. Further, we wish to investigate the action of old preparations of digitalis upon frogs and upon guinea pigs to see whether the rate of deterioration is the same as determined by the two methods.

In this paper we present only a preliminary report. Two factors, the lack of time and the great difficulty of securing guinea pigs, have forced us to postpone much of that we had contemplated doing, but we have secured some rather incomplete data upon a few of the points mentioned.

We found it impossible to obtain a sufficient number of pigs, although we tried dealers in Indianapolis, Terre Haute, Lexington, Chicago, and Boston. The pigs we secured were, except when stated otherwise, fed liberally on oats, hay and cabbage, and had access to water constantly.

In these earlier experiments, we have used the crystalline gratus strophanthin or ouabain of Merck. A stock solution of 1 to 1000 was made up with 70 per cent alcohol, and this was diluted 1-10 with normal salt solution before injection. We realize that there are points of difference in the action of the various members of the digitalis group, but we do not believe that these differences are great enough to vitiate the results we have secured. The solution was injected under the skin of the abdomen by means of the Hitchens syringe, by which accuracy of dosage was secured.

Dr. Reed at first considered that any animal receiving a lethal dose would succumb within three hours. The time was subsequently extended to twelve hours, but the impossibility of working a twelve hour limit in the ordinary day led us to adopt a twenty-four hour limit. One pig succumbed after thirty hours; another after fifty hours had elapsed.

In every instance that we observed the lethal action of tincture of digitalis or of ouabain upon guinea pigs, we noted that the animals made violent ineffectual inspiratory efforts, the phenomena suggesting obstruction of the air passages. In a few minutes the struggles ceased, the animals lost consciousness and were apparently dead, but in every case the heart could be distinctly felt beating, and continued to beat several minutes. On opening the chests of such animals after the heart had ceased beating, the organ was always in diastole. We were convinced from this that the cause of death from poisoning by ouabain was due to respiratory failure, and to prove this we instituted artificial respiration on six animals, commencing to operate only when voluntary respiration had entirely ceased and the pigs were apparently dead. In all but two instances, marked temporary improvement occurred in the condition of the animals, but we were not able to save any of the series. From this we were led to conclude that death

of guinea pigs from poisoning by ouabain is due primarily to respiratory failure, but that cardiac poisoning is concerned in this and would ultimately, in itself, cause death. Possibly, by the earlier institution of artificial respiration, death could be averted, but we did not consider the point of sufficient importance to justify the necessary infliction of pain.

It must be remembered that the different members of the digitalis group differ among themselves as regards the relative intensity of their action upon the central nervous system and upon the heart. Possibly, ouabain has more of the direct cardiac action than have the bodies that Nestor used, which would account for our contradictory results.

The following are records of observations typical of the series, save in the two animals where death occurred before commencement of artificial respiration:

- No. 1. 1:15 P. M.—Pig weighing 485 grams received 0.00035gm. ouabain per gram body weight, subcutaneously.
 2:50 P. M.—Complete cessation of respiration. Animal limp and apparently dead, except for strong, rapid heart-beat.
 2:52 P. M.—Artificial respiration begun.
 2:58 P. M.—Animal struggles feebly; heart beat strong and regular.
 3:27 P. M.—Thorax opened. Heart contracting feebly; slow and regular rate.
 3:45 P. M.—Heart ceases in systole.
- No. 2. 1:45 P. M.—Weight 280 gm. received 0.00000025 gm. ouabain per gm. body weight, subcutaneously.
 2:30 P. M.—Violent convulsions.
 2:35 P. M.—Respiration ceased. Limp and unconscious.
 2:38 P. M.—Artificial respiration begun.
 2:40 P. M.—Heart beating strongly.
 4:00 P. M.—Heart-beat faintly felt.
 4:05 P. M.—Chest opened; feeble auricular contractions. Ventricles contracted.

An attempt was made to learn with what degree of accuracy the minimum lethal dose of ouabain could be determined upon a series of pigs kept under the same conditions. The following were the results secured:

TABLE No. I.			
Dose	per gm.	Survived	Died
0.00020	mgm.	1	0
0.00023	mgm.	1	0
0.00024	mgm.	1	0
0.00025	mgm.	4	0
0.00026	mgm.	1	1
0.00027	mgm.	4	2
0.00028	mgm.	4	3
0.00029	mgm.	4	5
0.00030	mgm.	2	6
0.00031	mgm.	0	1
0.00032	mgm.	1*	0
0.00033	mgm.	0	1
0.00035	mgm.	0	2
0.000375	mgm.	0	1
0.00040	mgm.	0	1

* Died during night over thirty hours after injection.

From this table it appears that 0.00026 mgm. killed one pig, while 0.00032 mgm. failed to kill another within the twenty-four hour limit, a difference of 23 per cent. It must be understood, however, that the pigs in this series differed

in sex, weight, and the locality from which they came. The individual variation was not nearly as large as we had expected to find, and we are inclined to think that even less variation would be encountered when the pigs are of the same age and weight and are grown in the same locality. We regret that the impossibility of getting a sufficient number of animals prevented us from making this series as complete as it should be.

The next point of practical importance was a study of the influence of diet. We were struck by the rapid increase in the weight of those pigs fed liberally, and it occurred to us that this rapid increase in weight might cause increase in susceptibility.

Two lots of six pigs each were selected and placed under the same general conditions. One lot was fed liberally on a mixed oat, clover hay, cabbage, and carrot diet for seven days. The other lot was fed a restricted amount of the same diet for the same length of time. The well-fed pigs gained an average of 21 grams per pig, while those on the restricted diet lost on the average 14 grams per pig. The minimum lethal dose per gram weight for the pigs on a liberal diet was found to be 0.00026 mg., while that for those on the restricted diet was 0.00025 mg.

TABLE No. II.

No.	Sex	Dose in mg. <i>Result of liberal mixed diet.</i>			
1.....	M	328	356	0.00024	Survived.
2.....	M	241	280	0.00025	Survived.
3.....	M	678	684	0.00025	Survived.
4.....	M	173	194	0.00026	Died 1 hr. 10 min.
5.....	M	233	253	0.00027	Died 1 hr. 20 min.
6.....	M	305	319	0.00029	Died 1 hr. 30 min.
<i>Result of restricted mixed diet.</i>					
1.....	M	162	159	0.00024	Survived.
2.....	M	291	280	0.00025	Died 1 hr. 50 min.
3.....	M	579	531	0.00025	Died 1 hr. 30 min.
4.....	F	229	239	0.00026	Died 1 hr. 15 min.
5.....	F	261	250	0.00027	Died 1 hr. 15 min.
6.....	M	343	321	0.00029	Died 1 hr. 7 min.

Hunt found variations in diet to influence markedly the susceptibility of guinea pigs to acetonitrile poisoning and suggests that oats diet has some specific action upon the thyroid. It seemed to us that the susceptibility of these animals to digitalis might be similarly influenced, but the impossibility of securing sufficient numbers of pigs and the limited time at our disposal, prevented us from securing really conclusive evidence on this point.

Sixteen sound, healthy pigs, raised by the same breeder, under similar conditions, were divided into two groups of eight. The members of the first group were fed as much oats as they would take and were given a small amount of cabbage once. The members of the second group were fed as much cabbage and carrots as they would take. As may be seen from the table, the whole time of the experiment was fourteen days, and if such results were observed after this limited time on these different diets, more striking differences would be expected when the experiment extends over considerable time. One pig of Group I became sick and was not used; one pig of Group II was discarded because a part of the ouabain solution escaped from the syringe when the injection was being made.

TABLE No. III.

Series I. Oats Diet.

No.	7-25-11 Weight	8-7-11 Weight	8-8-11 Weight	Dose in gms.	
1	140	167	—	0.00000022	Survived.
2	200	—	200	0.00000022	Survived.
3	117	—	116	0.00000023	Survived. (Died 50 hrs. after injection.)
4	174	—	230	0.00000024	Died.
5	293.5	—	318	0.00000024	Died.
6	189	179	—	0.00000024	Died.
7	174	175	—	0.00000026	Died.

Series II. Cabbage and Carrots.

1	147	152	—	0.00000026	Survived.
2	315	—	295	0.00000026	Survived.
3	175	178	—	0.00000026	Survived.
4	186	177	—	0.00000026	Survived.
5	221	—	213	0.00000026	Survived.
6	216	—	215	0.00000027	Survived.
7	226.5	—	220	0.00000028	Survived.

The results secured by such a limited number of animals are, of course, not absolutely conclusive. None of the pigs of Group II seemed seriously sick, although a dose of 0.00000028 gm. was given one, while pig No. 3 of Group II succumbed to 0.00000023 after 50 hours and doses greater than this were invariably fatal within 24 hours. It is unfortunate that the scarcity of guinea pigs and the lack of time prevented us from going more fully into this question. We hope to do this later.

In conclusion, we may say that the individual variations in the susceptibility of guinea pigs to poisoning by ouabain, as determined in a small series of animals, varies as much as 23 per cent. This may be due to age, weight, or source of the animals.

2. That the life of a guinea pig that has received a lethal dose of ouabain can be prolonged by the employment of artificial respiration, but in no instance were we able to save the animal.

3. That a diet of oats with a minimum amount of food seems to cause a decided increase in the susceptibility of guinea pigs; while a diet exclusively of green food seems to diminish susceptibility.

The first and third points are of great practical importance, and, if they be confirmed, would seem to render the guinea pig method as now employed unsuited for standardization of the members of the digitalis group.

PHARMACOLOGICAL LABORATORY, ELI LILLY & Co., July 11, 1911.

THE CRIMES OF RESPECTABILITY.

"Theft and murder are awful crimes, yet in any single year the aggregate sorrow, pain and suffering they cause in a nation is microscopic when compared with the sorrows that come from the crimes of the tongue. Place in one of the scale-pans of Justice the evils resulting from the acts of criminals, and in the other the grief and tears and suffering resulting from the crimes of respectability, and you will start back in amazement as you see the scale you thought the heavier shoot high in air."—*William George Jordan.*

EXPERIMENTS WITH THE CAT METHOD FOR TESTING DIGITALIS AND ITS ALLIES.

C. R. ECKLER.

There are at present four American methods in use for the physiological testing of the digitalis series, namely: The twelve-hour frog method, proposed by Houghton; the one-hour frog heart method, proposed by Famulener and Lyons; the guinea pig method, proposed by Reed and Vanderkleed, and the cat method, proposed by Hatcher and Brody.

In view of the large amount of work which is being carried out just now with these methods, with the hope that some one may be found sufficiently accurate and convenient to justify its insertion into the next Pharmacopœia, it seemed proper to report some results obtained with one of these—the cat method of Hatcher and Brody. They describe their method in the *American Journal of Pharmacy* for August, 1910, and state that it is an accurate one, and one that can be conveniently carried out by the retail pharmacist. The purpose of this study was to ascertain with what ease the method could be used, and what uniformity of results could be obtained. Since they have not given all the details of manipulation, I will describe the method as I used it, my endeavor being to carry it out in all respects just as they did.

Fully grown, apparently healthy cats were selected. In general these were stray cats of the city, and represented all common breeds and mixtures. They were accurately weighed, and then anaesthetized in the following manner: The animal was placed in a small box, just large enough to accommodate the body, with a small circular notch at the top of one end of a size which would just admit the neck. A cat in the box with the neck in place, the sliding lid was forced shut and held by a peg. Thus the animal was unable to withdraw its head. The anaesthetic was then given from a small copper cone carrying on a transverse screen a pad of cotton or gauze. A few drops of chloroform were placed on the cotton at the start in order to hasten this operation. As soon as the animal was unconscious this pad of cotton was replaced by another upon which only ether was dropped. The cat was then tied on an animal board (somewhat resembling the Harvard) with back down, legs outstretched, and head securely fastened in a holder. This board, supported on legs, was made so as to drain at a point near the lower (tail) end, under which a receiving vessel was placed. The animal in place, the femoral veins were dissected out and small glass cannulae inserted. The solutions were contained in burettes, the ouabain in one and the digitalis body in the other, and were conveyed to the cannulae by narrow catheter tubing. The injection extended, as near as could be arranged, over a period of ninety minutes.

THE OUABAIN SOLUTION.

Merck's crystalline ouabain was used. The weighing was done on an accurate chemical balance, and a stock solution 1:10,000 was made in a one-litre volumetric flask. For use, samples were drawn off with a pipette and diluted to the strength

1:100,000 in a narrow glass-stoppered 200 cc. cylinder. All dilutions were made with recently prepared physiological salt solution (0.75% NaCl). The stock solution was kept in a cool, dark cupboard, and in no case was used after two weeks old. The solution for use was made up as needed.

After running two preliminary experiments to become acquainted with the technique, a series of twenty-six experiments with ouabain was begun. The procedure and results were as follows:

The weight of the animal having been taken, the theoretical amount of solution required was calculated. Since the lethal dose of ouabain for cats, according to Dr. Hatcher, is .0001 gram per kilogram of body weight, the theoretical amount of solution would be the number of cubic centimeters required, for any given animal, to supply .0001 gm. per kgm. And since each cubic centimeter of a 1:100,000 solution would contain .00001 gm. a 3.2 kgm. cat, for example, would require 32 cc. Ninety minutes being the period of injection, the proportionate part of the theoretical amount necessary to be run in each minute or two minutes, was calculated. The operator seated at the table, continued the anaesthesia by placing a small pad of gauze over the nose and supplying only sufficient ether to just keep the animal quiet. The burette having been filled and the time noted, the injection was begun, running in slowly every minute or two minutes the amount proportioned. The cat was carefully watched particularly toward the end when the larger part of the theoretical amount had been injected. Death was usually preceded by very rapid respiration and decided convulsive movements after which the respiration ceased to be regular and was prolonged for a few minutes only by gasps. As soon as these symptoms of approaching death appeared, the injection was stopped. If, after waiting a few minutes, the animal did not die, the injection was continued very slowly and with great caution. When the respiration had ceased to be regular, the number of cubic centimeters of solution used and the time were noted, and before the gasping had entirely ceased the heart was exposed. In the majority of cases, rhythmic contractions of the heart had ceased. Sometimes the heart was in feeble delirium, but usually the left ventricle was still and the other chambers were feebly contracting. Out of twenty-six experiments with ouabain, sixteen with strophanthus, and twenty-seven with digitalis, only seven hearts were found beating rhythmically, and in these the contractions were very feeble. Twelve hearts showed the left ventricle in quite complete systole. It should be remembered that regular respiration had ceased from one to three minutes previous to the exposure of these hearts. In one instance under ouabain, paraldehyde was used as the anaesthetic (1.8 cc. per kgm. Merck's).

Immediately upon appearance of the gasping, without opening the thorax, artificial respiration was instituted. The heart seemed to improve, and continued to beat until at the end of ten minutes one cubic centimeter more of the solution was slowly injected, when it stopped. With cat No. 26, artificial respiration was supplied all through the experiment, still the animal died within the ninety minutes, having received almost the exact theoretical amount. To accurately determine the effect of artificial respiration upon the lethal dose would, of course,

require a large number of experiments, an interesting point, but one I have not been able to work out for lack of time and animals.

OUABAIN.

Date	Cat. No.	Sex	Wt. in kgs.	Cc. of Sol.	Ouabain in gm. per kgm	Time in Min.
12-16-10	1	Male	2.10	25.0	.000,119	99
12-18-10	2	Male	4.70	32.0	.000,068	70
12-21-10	3	Male	2.80	25.0	.000,089	71
12-22-10	4*	Male	2.00	15.0	.000,075	75
12-24-10	5	Female	1.10	11.5	.000,104	118
12-24-10	6	Male	1.80	16.8	.000,093	87
1- 4-11	7	Male	1.70	16.0	.000,094	93
1- 5-11	8	Male	2.70	16.0	.000,060	61
1-30-11	9	Female	1.19	11.2	.000,094	88
1-31-11	10	Male	2.11	22.1	.000,105	94
2- 1-11	11	Female	1.77	17.4	.000,098	95
2- 2-11	12	Female	2.33	19.6	.000,084	82
2- 2-11	13	Female	0.97	13.0	.000,134	104
2- 3-11	14	Female	2.13	27.0	.000,126	106
2- 4-11	15	Male	3.42	46.0	.000,134	106
2- 4-11	16	Female	2.43	26.5	.000,109	97
2-10-11	17	Male	2.50	23.0	.000,092	82
2-11-11	18	Male	3.27	32.7	.000,100	91
2-13-11	19	Male	2.94	25.5	.000,086	77
2-13-11	20	Male	1.81	17.5	.000,096	86
2-14-11	21	Male	2.40	20.0	.000,083	76
2-14-11	22	Female	1.87	16.0	.000,085	83
2-15-11	23	Male	2.28	22.0	.000,096	90
2-15-11	24	Female	2.25	21.0	.000,093	87
2-15-11	25	Female	1.92	13.5	.000,070	65
6-14-11	26	Female	2.38	24.0	.000,100	87

* Received paraldehyde instead of ether.

Two samples of strophanthus seed (Kombe) were received for testing at this time. These were reduced to No. 60 powder. Ten gm. samples were placed in 150 cc. Erlenmeyer flasks, supplied with good, tightly-fitting corks, and macerated with 40 cc. of 75 per cent. alcohol for 72 hours with occasional agitation. The content of each flask was then poured into a small, narrow percolator fitted at the neck with a tight plug of cotton. The first portion of each percolate was returned and the percolation was then allowed to proceed at the rate of ten drops per minute. Seventy-five per cent. alcohol was added from time to time until 200 cc. of percolate were obtained, thus finishing a 5 per cent. tincture. For injection, 1:6000 solutions were used. These were made in the same manner as described under ouabain. The results from eight experiments on each of these samples were as follows:

STROPHANTHUS SEED No. B-565.

Dilution 1:6000.			1 cc.=.000,166 gm. drug. Strophanthus			
Date	Cat No.	Sex	Wt. in kgm.	Cc. Sol.	in gm.	Time
2-16-11	1	Male	2.23	16.0	.001,19	69
2-16-11	2	Male	2.65	22.0	.001,37	100
2-16-11	3	Female	2.82	26.0	.001,53	98
2-17-11	4	Male	2.29	22.9	.001,66	107
2-17-11	5	Male	2.11	24.0	.001,88	100
2-18-11	6	Male	2.98	30.0	.001,66	95
2-18-11	7	Male	3.07	31.0	.001,67	100
2-18-11	8	Female	2.04	18.0	.001,46	66

F. E. DIGITALIS No. 335929.

5-11-11	1	Female	1.72	10.0	3.5	.072,8	79
5-11-11	2	Male	3.18	15.0	21.0	.138,7	114
5-11-11	3	Female	1.75	11.7	9.0	.137,5	100
5-12-11	4	Female	1.89	10.0	10.0	.112,3	90
5-13-11	5	Female ¹	2.15	10.0	15.0	.153,4	155
5-15-11	6	Female ¹	2.55	12.0	25.5	.522,7	114
5-15-11	7	Female ¹	1.82	12.0	12.0	.193,5	80
5-16-11	8	Male	3.00	16.0	17.5	.127,9	115
5-17-11	9	Female ¹	2.90	17.5	9.7	.090,6	75
5-18-11	10	Male	2.46	16.0	7.0	.090,8	75
5-18-11	11	Female	1.98	11.0	8.0	.093,2	85

¹In varying stages of lactation.

TR. DIGITALIS No. 2-B.

5-22-11	1	Female	2.11	13.0	3.5	.073,2	61
5-23-11	2	Male	2.89	14.0	16.5	.112,6	95
5-23-11	3	Female ¹	2.35	13.0	15.0	.154,2	85
5-24-11	4	Male	2.83	17.0	3.0	.067,1	111
5-24-11	5	Female ²	2.46	15.0	14.0	.141,4	106
5-24-11	6	Male	2.30	16.4	8.0	.109,3	81
5-25-11	7	Female	3.00	16.0	7.5	.071,1	73

¹Lactating.²Apparently in period immediately following lactation. Glands were still enlarged, but not functioning.

ASSAYS ON FOREGOING PREPARATIONS BY OTHER METHODS.

One hour frog heart method. Variety *Rana pipiens*. Temperature 20° C.

Strophanthus Seed B-565.

Weight in grams.	Dose per gram.	Result
36.5	.000,006,0	Stopped
40.8	.000,005,0	"
15.1	.000,005,0	"
28.1	.000,004,0	"
39.6	.000,004,0	"
23.0	.000,004,0	"
43.8	.000,003,5	"
36.4	.000,003,5	"
48.7	.000,003,5	Beating
35.2	.000,003,0	"
19.4	.000,003,0	"

Strophanthus Seed B-566.

18.2	.000,006,0	Stopped
20.6	.000,005,0	"
23.6	.000,005,0	"
15.4	.000,005,0	"
43.7	.000,005,0	"
18.1	.000,004,0	"
18.5	.000,004,0	"
25.8	.000,004,0	"
28.0	.000,004,0	Beating
28.8	.000,004,0	Stopped
34.4	.000,004,0	"
37.2	.000,003,5	"
45.3	.000,003,5	Beating
49.0	.000,003,5	"
37.6	.000,003,0	"

GUINEA PIG METHOD.

F. E. Digitalis No. 416233.

Weight in grams.	Dose per gram.	Result
709	,000,5	Recovered
786	,000,5	"
825	,000,5	"
467	,000,5	Died
524	,000,5	"
694	,000,6	Recovered
701	,000,6	"
814	,000,6	Died
835	,000,6	"
744	,000,7	"
517	,000,7	"
481	,000,8	"

F. E. Digitalis No. 335929.

750	,000,4	Recovered
340	,000,4	"
736	,000,4	"
680	,000,4	"
845	,000,5	"
630	,000,5	"
737	,000,6	"
772	,000,6	"
737	,000,7	Died
725	,000,7	"
531	,000,7	"
552	,000,7	Recovered
731	,000,8	"
538	,000,8	Died
375	,000,8	"

ONE HOUR FROG HEART METHOD.

Variety *Rana pipiens*. Temperature 20° C.

F. E. Digitalis No. 416233.

Weight in grams.	Dose per gram.	Result
40.9	,000,50	Beating
42.9	,000,60	"
39.1	,000,60	"
34.0	,000,70	"
46.5	,000,70	"
42.2	,000,75	"
50.8	,000,80	"
38.8	,000,80	"
31.2	,000,90	"
38.2	,000,90	Stopped
31.4	,001,00	"
35.5	,001,00	"

F. E. Digitalis No. 335929.

28.9	,000,90	Stopped
22.0	,000,80	"
21.0	,000,70	"
27.6	,000,70	"
30.5	,000,70	"
23.0	,000,70	"
42.9	,000,70	"
19.3	,000,65	Beating
20.2	,000,60	Stopped
23.5	,000,60	"
36.5	,000,60	"
37.4	,000,60	Beating
36.5	,000,50	"

The assays of these preparations by other methods have been inserted here, with the belief that they will be of some interest to the reader if closely analyzed.

although no decided conclusions can be drawn from so small a number. Considering F. E. Digitalis No. 416233 and No. 335929 by the guinea pig and frog heart methods, it will be seen that while they show almost the same result on the guinea pig, there is a decided difference on the frog's heart. A lack of relationship in the results obtained by these two methods has been observed by others. Remembering that these fluids test the same on the guinea pig, consider the assays by the cat method where No. 416233 is decidedly more active than No. 335929, the reverse of what was found by the frog heart method.

Attention should be called to the lot of animals used for No. 335929, which was perhaps the least suitable of any. It may be noticed that the greater number were females, varying considerably in size, some being in different stages of lactation. (No. 6 was in the early stage and had exceptionally large glands). The males were all large, and the results, perhaps a coincidence, varied somewhat in relation to the weight:

No. 2	Weight.....	3.18 kgms.	Result.....	.140.3
No. 8	"	3.00 "	" .....	.127.8
No. 10	"	2.46 "	" .....	.090.8

The assays on the two samples of strophanthus seed are almost identical by the frog heart method, and show but a small difference by the cat method.

Animals. Hatcher and Brody selected cats in preference to dogs, and I believe rabbits, for several reasons, namely: "Accuracy afforded, facility with which they may be obtained, ease with which they may be handled, * * *, cheapness, and the fact that their use does not affect the sensibilities of the sentimental portion of the community to the same extent that the employment of the dog does." Having used no other animals for this particular method, I cannot remark on the point of accuracy. My experience has been that there is little in their favor regarding cost, all things considered. Cats are easily handled, though to my mind are no more so than dogs, or rabbits, except that in the latter greater care is necessary in regard to any dissection or the giving of anaesthetics. I have found them far more difficult to obtain than rabbits and hardly less so than dogs. Whether their use affects the sensibilities of the sentimental portion of the community less than that of the dog, seems questionable. At any rate, the use of cats certainly does affect the sensibilities of many people, and the procuring of a sufficient number of animals for this piece of work has been the source of considerable trouble. And for a manufacturing plant of this size, to secure enough cats to carry out the routine assays on the several members of the digitalis series, would be a practical impossibility. If some easily procurable animal, such as the rabbit, could be used for this work, then one great difficulty would be removed. This point is of immense importance to the manufacturer, by whom nearly all of the practical physiological assaying will always be done.

Having experienced difficulty in buying cats, an attempt was made at this laboratory to raise them, but this met with poor success. It has seemed that only under the very best conditions can cats be kept well for any considerable length of time. It has been our not infrequent experience that cats will refuse sweet milk and raw beef for some time after having been received, and while an abundance of food has been supplied, our cats have usually lost in weight.

Lactating animals cannot be depended upon, as they seem to possess a greater tolerance for the drug, the degree depending on the stage of lactation.

The period and rate of injection. The lethal dose of any of the digitalis bodies cannot, of course, be told at the outset. This is indeed the figure sought. Therefore, "50 per cent. of the lethal dose" is a quantity which can only be widely approximated by one's experience with the given preparation. Whether this point in itself is a matter of great importance, within certain wide limits, I am unable to say. It would seem to be of importance, however, that the injection of all of these drugs be proportioned as evenly as possible over the ninety minutes. After one has injected an amount of digitalis, for example, and has waited the twenty minutes, he is ready to proceed with the ouabain solution. Since he does not know the value of the digitalis, he does not know, consequently, how much ouabain solution it will be necessary to inject during the following period of one hour. And not knowing this point, he is unable to judge how rapidly to inject. If he calculates on 5 cc. when 10 cc. would actually be required, then he will come to the end of the ninety minute period with the animal still alive, and he must cautiously proceed with the probable result that one hundred and five minutes or so will be covered in completing the experiment. And having injected at a slower rate, possibly a larger amount of ouabain may have been required. On the other hand, if he calculates on 10 cc. when only 5 cc. are necessary, he may kill the animal before the end of the period—perhaps in seventy-five minutes. And having injected at a more rapid rate, possibly less ouabain may have been used than would have been under normal conditions.

It might be remarked that the first experiment would furnish these points. This might be true; still, it might happen that the results from number one would be exceptional. Then the operator would be thrown off on number two, and when he found the results from number two quite different, number three would be necessary in order to tell which was more nearly correct.

If these points are of no importance, then it would seem that the time limit of ninety minutes would be of no importance.

Number of animals and time. In general it would seem that at least three experiments would be necessary in order to determine with confidence the strength of a preparation. If two out of three results checked quite closely, as under F. E. Digitalis No. 405467 (.113,5—.115,2), that number might be sufficient. Under strophanthus seed No. B-565, however, the results show a gradual increase up to the sixth experiment (.001,19; .001,37; .001,53; .001,66; .001,88), and under F. E. Digitalis No. 416233, results Nos. 1, 4 and 6 check each other rather closely (.077,3; .086,1; .087,4), and Nos. 2, 3 and 5 at a different figure check each other even more closely (.065,8; .068,2; .068,8).

If three or four experiments were sufficient, then an assay could be made in one day, a point in favor of the method. This would require one person's entire time and attention for the four and a half or six hours, besides part of the time of an assistant. At that, more actual time would be required than for any of the other methods.

Ease of manipulation and accuracy. The method seems simple, and still, all points considered, it is the most difficult of all with which I am acquainted.

My results have been quite disappointing. They show variations for the different preparations, as follows:

Ouabain	123.3%
Excluding results No. 2, 4, 8, and 25.....	61.4%
Strophanthus Seed No. B-565.....	57.9%
Strophanthus Seed No. B-566.....	48.3%
F. E. Digitalis No. 405467.....	19.0%
F. E. Digitalis No. 416233.....	32.8%
F. E. Digitalis No. 335929 (excluding lactating animals)	90.5%
Excluding lactating animals and No. 1.....	53.0%
Tr. Digitalis No. 2-B (excluding Nos. 3 and 5).....	67.8%

My results with crystalline ouabain would indicate that the lethal dose of this substance varies considerably with different animals. It seems, then, irrational to estimate the value of a preparation of digitalis, from its supposed equivalent of a body which is in itself, for any given animal, an unknown quantity. The authors of this method claim that crystalline ouabain will exactly replace digitalis in regard to its toxicity on the cat. It seems to me, however, that there might be some variance in its power to exactly replace different samples of digitalis, depending on the proportion of active principles present and the condition of these principles, whether or not decomposed. Since the amount of digitalis to be injected which will represent 50.75 per cent. of the required amount, is an unknown quantity, it necessarily follows that the amount of ouabain required to complete the experiment, even if its toxicity could be exactly known, is an unknown quantity. Therefore, not knowing the amount of ouabain required, the rate of injection, which probably plays an important part, cannot be known. Lastly, the time required to kill, being dependent on the rate of injection, constitutes another unknown factor. So, when testing a sample of digitalis, one has to deal with six or more unknown factors. This requires an operator of considerable experience and skill.

SUMMARY.

Considering the results of this work, together with my experience with the other methods, I am lead to make the following statements in conclusion:

The cat method of Hatcher and Brody is unquestionably the most complicated and difficult of all the American methods, requiring an operator of considerable experience in animal experimentation.

It is *not* a method that will be found convenient and generally serviceable by the retail pharmacist.

It is more time-consuming than the other methods, requiring constant attention when started.

The item of expense, like that of the guinea pig method, is decidedly in its disfavor.

The procuring of a sufficient number of *suitable* animals is a practical impos-

sibility for the manufacturing pharmacist having a large number of preparations to test. This may also be the source of much unpleasantness and trouble.

Lactating animals cannot be depended upon, as they seem to possess a greater tolerance for the drug, the degree depending on the stage of lactation.

While the individual results will not infrequently check each other very closely, considering the results of an entire assay, great variations will often be observed, amounting in some cases to more than 100 per cent.

When testing a preparation one has to consider six or more unknown factors, namely:

1. Toxicity of ouabain.
2. Power of ouabain to exactly replace the digitalis bodies.
3. Amount of digitalis to be injected.
4. Amount of ouabain to be injected.
5. Rate of injection.
6. Time.

This method has perhaps one point of superiority over all others in that the matter of absorption is entirely eliminated.

LABORATORY OF PHARMACOLOGY, ELI LILLY & Co., Indianapolis, Ind.

THE DRUGGIST AND THE LOCAL ORGANIZATION.

While times among retail pharmacists have improved when we compare them with the past, we believe that the progress is by no means completed. The few years of experience in organization work which pharmacists have had is only a beginning. The future must continue to bring improvement. The time will come when no pharmacist will think of trying to do business without belonging to his local organization any more than he now tries to get along without a bank account and credit with manufacturers and jobbers.—*Meyer Brothers Druggist.*

Section on Education and Legislation

Papers Presented at the Fifty-Ninth Convention

MEMORIAL PRESENTED TO THE COMMITTEE ON WAYS AND MEANS OF THE HOUSE OF REPRESENTATIVES.*

GENTLEMEN:—Representing the American Pharmaceutical Association, founded in eighteen hundred and fifty-two, and always, since then, actively and earnestly engaged in promoting the public welfare, in connection with the practice of pharmacy, the undersigned, chairman of its Committee on National Legislation, begs leave to read from the records of its last annual convention, held at Richmond, Virginia, May, 1910, as follows:

"He (Mr. Hilton) moved that the Association go on record in support of the Foster Bill, with certain modifications."

"He (Mr. Hallberg) moved, as a substitute, that the recommendation be changed to the effect that this Association approve any proper regulations for the handling of narcotic, habit-forming drugs in interstate commerce.

"This motion was seconded by Mr. Dittmyer of West Virginia and carried."

In the Association's behalf, I respectfully submit, for your careful consideration, the following comments upon H. R. Bill 25241, introduced by Mr. Foster of Vermont, April 30, 1910, and printed:

First: That the list of drugs and chemicals appearing in Section 1 is incomplete, since it does not include a number of synthetic products, namely, alypin, novocaine and holocaine, which are neither derivatives nor salts of any of the drugs nominated, but which have the same harmful and destructive qualities as cocaine, also that no provision is made, if possible to control the importation and sale of other synthetics of like nature that may be subsequently introduced. Special attention is also called to the desirability of mentioning the trade marked name of such a derivative as diacetyl morphine, marketed as "heroin."

Second: That it is practically impossible to satisfactorily or effectively separate manufacturers and dealers, to be registered under the act, into the wholesale and retail classes provided for; the lines between these, in many and nearly all cases, is imperceptible. A large number of jobbers sell at retail and many more retailers sell at wholesale. Nearly all retail pharmacists manufacture these, so-called, original drugs into their various preparations. It would seem wise, therefore, to have but one class of registered dealers under this act, each paying a uniform fee of, say two dollars and that the bond of each shall be in proportion to the amounts of these drugs a person may handle.

Third: That Section 2 is involved, ambiguous and not in accord with Section 6. Also that it is faulty in the provision that requires a special tax to be paid upon crude products and allows alkaloids and alkaloidal salts, that are separated

* From the Report of the Committee on National Legislation, read at the Boston Meeting, 1911.

and made from the crude drugs, to be imported into this country free of the special tax and entirely without control, which would seem to render the act non-effective in the very object sought to be obtained.

Fourth: That the proviso of Section 2 is too greatly restricted and the privilege given to the "duly registered and bonded manufacturing chemist or manufacturing pharmacist" should be extended to any person duly registered and bonded under this act.

Fifth: That the absolute prohibition of interstate commerce in these drugs, except between those registered under this act, as provided for in Section 4, will entail unjust, unkind and injurious hardships upon many citizens residing near the border lines of our respective states and upon those citizens who may temporarily reside outside of their own states and away from their regular physicians and pharmacists. It would therefore, seem that legitimate sales on the original prescriptions of physicians should be exempt from the operations of this law. To the several states must be left the control of the writers of prescriptions, within their respective borders.

Sixth: That Section 6 provide a penalty for the non-payment of the special tax on the salts, derivatives and preparations of the cited drugs, when no provision for the laying and rating of such a tax has been made.

Because of these facts and to make our contentions more explicit and exact, I most respectfully submit these several amendments for consideration:

Amend Section 1, page one, by striking out all after "opium," line 4, up to "and," in line 6, and substitute the following:

Morphine, diacetyl morphine, heroin, codeine, cannabis, hydrated chloral, holocaine, novocaine, alpha-eucaine, beta-eucaine, alypin, coca leaves, cocaine, their salts, derivatives, preparations or compounds or any substance or synthetic product or chemical that may be used as a substitute for cocaine, or having the same local stimulating effect as cocaine, under whatsoever name it may be known or described.

Amend Section 1, page 2, line 1, by striking out the word "or" and inserting a comma; lines 2 and 3, by striking out all after "jobber," up to "retailer" and by substituting a comma and the words, "dispensing pharmacist"; in line 5, amend by changing "one dollar" to "two dollars."

Amend Section 2 by including the full list of drugs, chemicals, etc., that is cited in Section 1 and by making proper provision for an equitable tax rating, on each of these. Also amend Section 2, page 3, by inserting after the word "any," in line 11, the word "person," and by striking out the words: "manufacturing chemist or manufacturing pharmacist" and inserting in their place the words "under this act."

Amend Section 4 by introducing, after the word "to," line 20, the words, "the dispensing of the original prescriptions of legalized practitioners of medicine, to."

Section 6 will need no amendment if Section 2 is amended to conform with Section 1; otherwise, Section 6 should be made to agree with Section 2 as now constructed.

HENRY P. HYNSON, *Chairman.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Fifty-Ninth Convention

SANITATION IN PHARMACY.

J. LEON LASCOFF.

In my practical experience as a pharmacist I have observed that the necessity of cleanliness is more urgent in our business than in any other. At the June, 1911, meeting of the New York State Pharmaceutical Association, held at Alexandria Bay, I presented a paper entitled "The Essentials of a Reputable Pharmacist," in which I mentioned among other things, the necessity of sanitary conditions in the pharmacy. In that paper I laid out certain rules and among those rules I called special attention to sanitation.

The definition of the word sanitation is, devising means for promoting public health and the removal of elements injurious to health. We pharmacists must by all means pay more attention to cleanliness than an ordinary storekeeper. We do not want to classify ourselves with them but since the enactment of the pure food law the sanitary conditions of groceries, delicatessen stores, dairies and butcher stores, are far superior to some drug stores.

What is the result of improper sanitary conditions?—disease, which is not a necessity in the world. It is an indication that something is wrong. Call this something what you may, it can all be included in one term, "dirt." Dirt is the abomination of humanity. It is the cause of most of the diseases and ailments of mankind. Whenever cleanliness is not observed, sickness is rampant. The bubonic plague in India and China, the sleeping sickness of Africa, the cholera and smallpox of Eastern Europe, the yellow fever of tropical America are all products of unsanitary conditions. The Great Plague and Black Death which spread over Europe early in the thirteenth century, snuffed out millions of lives, taking their most violent hold upon those places where streets were narrow and congested, houses ill-kept and dirt thickest. What is causing the great infant mortality, the great unnecessary murder of civilized communities?—Crowded conditions, slums, bad milk and impure air. What are all these but varieties of dirt? Think of conditions existing in Cuba and the Philippines, before the United States Government took possession. The white man could not live there. Yellow fever and other diseases were abundant, but now sanitary conditions are far better and diseases become rarer and rarer every day.

What is the greatest function any health department has to serve? That of compelling people to observe the most ordinary rules of cleanliness and sanitary conditions. The necessity of absolute cleanliness in all phases of life, at all times, is impressing itself more and more thoroughly upon all thinking beings. Pure

food laws are being passed, sanitary care of cows and milk is being enforced, clean streets are called for, disposal of garbage is being facilitated—everywhere improvements are being made. Sanitary bakeries are being erected, Red Cross barber shops opened, clean grocery stores, meat shops and delicatessen stores are called for. If it is imperative that the grocers and butchers keep sanitary conditions, how much more so is it for the druggist? He comes in contact with people at the most critical periods of their lives. At those times absolute cleanliness is essential. If improper conditions can kill a healthy person, how much more likely is it to do so, when the system is already poisoned with impurities, and already exhausted by disease.

The following is an extract from an article published not long ago in one of the California medical journals, calling attention to a dirty practice in many bakery stores: "The paper for wrapping cakes, etc., is in sheets, and when the saleswoman reaches for a sheet, she usually holds the loaf of bread or cake in the left hand and reaches for the sheet with her right hand, wetting her thumb with saliva, to facilitate the quick detaching of the top sheet on the pile. Then, frequently that part of the paper which she has moistened with her spittle is turned in and wrapped against the food that is later eaten, thus transferring some of the sputum to other people. One can imagine the danger of such a practice from an example seen, where a woman known to be syphilitic did precisely this thing."

The use of paper in rolls would go far to stop this practice, for there is not the necessity to wet the finger in order to separate one sheet from another.

I could mention a case where a physician lost a valuable patient on account of the unsanitary condition of his office. While the patient was perfectly satisfied with the treatment of the physician, the general appearance of the office disgusted him. A trained nurse, a friend of mine, told me of several instances where she was compelled to change the druggist on account of the filthy and dirty conditions of the store.

A few facts which I wish to bring out in reference to sanitation in the department bear upon the subject of sterilization as a means of bringing about proper sanitation in different instances. I shall mention as the first example the common abuse which is practiced in almost every pharmacy, and yet has been given little or no attention from the standpoint of sanitation, the returned magnesia and other medicine bottles. The bottle which has been in the sick room is returned to the pharmacy where it is usually washed in the ordinary way, refilled and then offered for sale to someone else. This bottle may have been in a room where some contagious disease was prevalent and allowed to remain, and by a natural course of events the disease germs find their way in and around the bottle, especially the rubber washer. Ordinary washing and scouring with hot water is not satisfactory for destroying pathogenic germs. All bottles so returned should be thoroughly sterilized as well as cleansed, and for this purpose I have devised a formaldehyde dry sterilizer, consisting of a zinc or tin cabinet with perforated shelves, upon which the bottles can be placed side by side. The solution (formaldehyde potassium permanganate) is placed at the bottom of the cabinet,

and the door tightly closed and sealed by means of rubber or leather strips (such as are used for weather strips). The generation of formaldehyde gas then goes on and sterilization is usually complete in about one hour or more.

This box can be constructed from wood, but should be metal lined, and under any circumstances must be hermetically sealed to block the escape of gas. The cost is trivial; it does not require attention, and as there is no heat or effervescence it is absolutely safe. In fact it is a simple process of fumigation, such as is practiced by the Health Department of New York. Any utensil or receptacle may be so fumigated.

Another point that is worth while mentioned is keeping the upper rim of the mouth of a bottle clean and dust free, which can be done by placing a ring of paper or celluloid cap over the mouth. Then when the medicine is poured out there is no contamination. The rings are made of celluloid chips, and with little trouble to the pharmacist.

The glass-top counter is by all means the ideal fixture in the prescription department and can be easily cleaned and sterilized when necessary.

Cleaning of mortars and pestles by scouring and burning out by pouring into the mortar about 1 oz. of denatured alcohol and lighting until consumed makes them absolutely sterile.

Careful cleaning of spatulas and ointment boards (which should always be of glass or porcelain) because ointments should be sterile, as well as in any other surgical dressing.

Most important of all are solutions prepared for subcutaneous and deep injection, such as cocaine solution, mercury salicylate in albolene, camphor and oil. When preparing these see that the vehicle is scrupulously clean and free from any visible foreign substance. The medical journals are full of accounts recording deaths due to carelessly prepared solutions for hypodermic use.

Paper towels are more sanitary than cotton ones, as they are destroyed after use and are inexpensive.

In making pill masses and rolling out pills it has been the routine habit to take up the divided mass and roll between the fingers to bring about the spheroid shape. In my opinion this is a very unsanitary and very filthy habit, as hands cannot be kept clean enough to insure the patient against swallowing some germs or filth that may have found its way into the pill in manipulation. I use very soft tissue paper in the hands and pick up the mass or pill and roll between the paper in the same manner as without the paper, which in my opinion is a cleaner and safer method.

In counting out pills, tablets and capsules from the original container into the dispensing receptacle never drop into the hands but directly into the box or cover thereof; in other words do not handle the pill or tablet but pass from one container into the other.

Many other minor points could be mentioned but are self-evident; such as a proper washing sink for employees, clean towels; condition of shelves and floor, etc. Absolute cleanliness should prevail in the entire makeup of your establishment. I bring this before you as a warning, as a suggestion to bear in mind that

sanitation should be equal to your accuracy in dispensing. That no compulsory sanitary code has ever been enforced affecting pharmacists seems to me to have been the result of oversight. In my humble opinion there should be a set of rules adopted by the Board of Pharmacy covering just such points as I have laid before you, and enforced as are the other laws. But, inasmuch as these do not exist as yet and the matter is left entirely to the discretion of each individual pharmacist, as a matter of fair play to yourself, employees and especially to the public, a reformation of present lax sanitary observances is by all means necessary. We, as professional men, dealing with the sick and those who are at our mercy, must needs follow in the naturally rapid strides made by "up-to-date" scientists and carry out the simple rules of sanitation and sterilization, and not until then do we fulfil our duty to the best of our ability, nor can we conscientiously state that we have given the public the best that is in us and the best for their own good and welfare.

A HOMEMADE STILL FOR RECOVERY OF ALCOHOL.

J. H. BEAL, PHARM. D.

The following simple and inexpensive piece of apparatus has been found efficient for the recovery of alcohol from the weak percolates obtained in the manufacture of fluidextracts, and from similar liquids.

The advantages of the still are its cheapness, and the fact that the liquid can be evaporated directly from a porcelain evaporating dish, thus avoiding the use of a flask.

The apparatus is composed of two enameled iron pans, one constituting the still body, and the other of slightly smaller diameter, so that when the latter is inverted its rim will fit neatly into the larger pan about one-third of the distance from the bottom of the latter. (Fig. 1.)

Through the bottom of the smaller pan, which constitutes the dome of the still, is punched a hole about 2.5 cm. in diameter into which a perforated cork is tightly inserted, and made vapor-tight by a luting of plaster of paris. Through the cork passes a curved glass tube which is connected with a Liebig or other condenser.

A second similar opening serves for the addition of fresh liquid, or for the insertion of a thermometer.

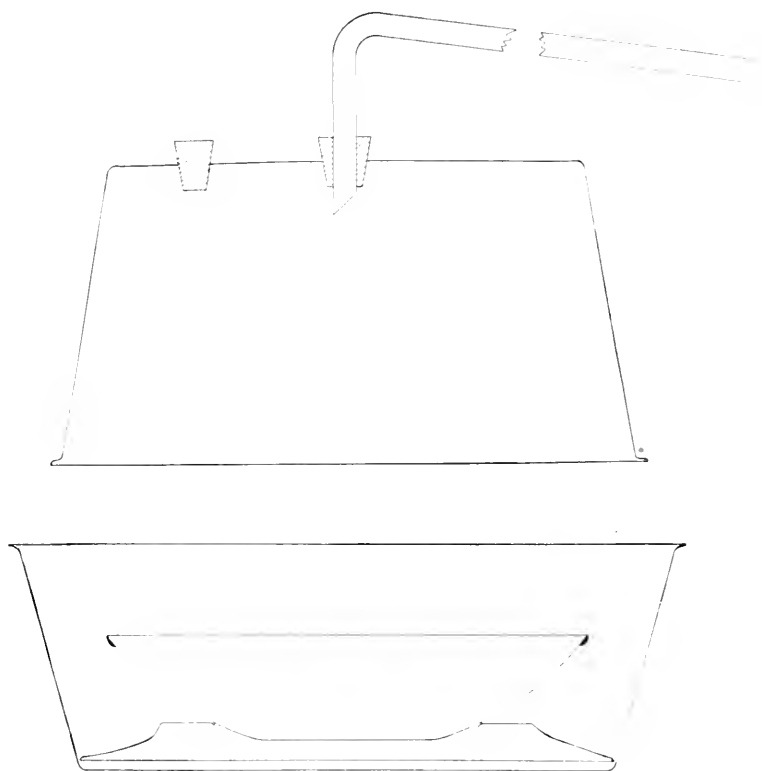
As a support for the evaporating dish there is used an ordinary pieplate in the bottom of which is cut a circular opening of a diameter sufficient to hold the evaporating dish, so that the bottom of the latter will be elevated about 1 to 2 cm. above the bottom of the still.

The evaporating dish and contents having been placed in position, the dome is placed over it and water poured into the lower dish until the level reaches above the margin of the dome, the water acting as a bath and also as a seal to prevent the escape of vapor.

Instead of water, glycerin, petrolatum or other liquid may be used, and for the recovery of alcoholic distillates is to be preferred.

If the vapor pressure tends to lift the dome from its position, it can be held in place by weights or by being wired down.

The cost of an apparatus of size sufficient to take a porcelain evaporating dish holding one liter should not exceed 25 to 30 cents.



A somewhat more efficient apparatus can be made by an average tinsmith as follows:

The bottom pan, or what corresponds to the body of the still, is made of copper or heavily tinned iron, and has soldered to its outer rim a gutter into which glycerin or other liquid can be placed as a seal, the edge of the dome resting in this gutter when the apparatus is set up.

If a piece of thick, soft twine, or candle wicking is laid in the gutter before the dome is placed in position the joint between the upper and lower halves of the still is made more nearly vapor-tight.

The dome can be held fast to the body either by wire or by stout twine passing over hook-like flanges attached to the dome and body respectively.

Section on Commercial Interests

Papers Presented at the Fifty-Ninth Convention

FACTORS CONSIDERED IN THE EXTENSION OF CREDIT.

C. MAHLON KLINE.

Credit is the backbone of modern business. With it, a man can command more capital, do more business and make more profit. The advantages of credit, or rather its possibilities, when properly used, are so generally recognized in the business world that it has often been a question in the mind of the writer why more retail druggists did not avail themselves of it, especially in the direction of obtaining loans to discount bills, by which they could obtain a much larger rate of interest on their money than the rate charged for the loan.

Generally speaking, there are three factors to be considered in the extension of credit: capital, capacity and character. To the student of credit conditions this statement is elementary, but to those of you who have not made credit a special study, it may be of interest to explain the relative importance of these factors. Credit may be extended on the strength of the existence of any one of them, but in no case can it be extended where all three are absent.

You may not be aware of the fact, but capital alone, regardless of character and capacity, entitles the possessor to credit in reasonable amounts. A man notoriously dishonest, and of no ability, provided he has a clear title to valuable property, can secure credit more easily than a man without capital and of admittedly good character. The reason for this is, of course, obvious. The laws of the country are so drawn that the creditors run a better chance of securing their money, if necessary, where capital is in existence, than they do where the ability to earn capital may be present, but which remains to be demonstrated. For this reason we very often see the example of a man without capital obeying moral laws and conducting himself in a decent Christian way, simply and solely because he realizes that in the absence of capital he must demonstrate character. Very often this same man, after his career has been crowned with wealth, will forsake utterly the principles that have guided his steps, and will attempt to defy moral laws and put aside Christian virtues, because he vainly imagines that his wealth places him beyond the control of the laws of God and man; and indeed, we are daily accustomed, in these modern days, to the spectacle of such a man continuing to live as he sees fit without the loss of either commercial power or wealth.

To turn to the second factor, that of capacity; capacity without capital, but with character, is an exceedingly important consideration in the retail drug business. The business is of such a nature that not very much capital is required, and if a man whose capacity is known, and whose character is above reproach, comes

to a supply house, the credit extended to him is often surprisingly large. On the other hand, capacity without character or without capital may be of value when properly controlled, but it is very seldom that a man of this kind meets with any measure of business success. Credit men have a little habit of inquiring into the character of the individual, and where wine, women and song are indicated, the individual receives scant consideration. I have known credit to be refused on immorality alone, simply because it is well known that immorality quickly undermines character and leads to financial downfall.

One of the misfortunes of the retail drug business in the past has been the fact that retail druggists knew little or nothing of the economic principles of the business world, and tried to do business by ignoring them. Today, under the leadership of the national pharmaceutical organizations, this condition is being rapidly changed. Furthermore, the colleges of pharmacy are seeing the signs of the times, and are giving special courses of commercial training to their students, a practice which cannot fail to make good business men as well as good professional men.

An able credit man has to take chances. He has to trust often largely to instinct, and is, of course, often sadly misled. It is very necessary, however, that he take risks, or else he will not be making the best of the possibilities of his position. The credit man who has no losses is not a good credit man; it means that he is losing more business than he should. In modern business losses up to a certain point are considered perfectly legitimate. If the labors of a credit man selling as he does in the territory within a radius of some hundred miles, are trying, how much more trying must they be to those who sell in foreign lands, more particularly those lands which are constantly in the turmoil of political upheaval, where a man may be a millionaire one day and a beggar the next. Those who sell goods in South American countries are particularly exposed to this sort of risk. Often a shipment is started to a man having the best of credit, and while the shipment is on the way this man's capital and belongings are wiped out of existence and his bills remain unpaid.

I heard of a case in New Orleans where a furniture company lost \$10,000 through a political upheaval of which they had no forewarning and of which they were unable to recover a cent. The consignee was an honest man, but of a different political belief than the revolutionist, who confiscated all his goods and deprived him of his resources.

It seems peculiar, but nevertheless it is a fact, that when once financial institutions form the habit of extending credit to an individual or company it is easier for such to continue borrowing than it would be had they never before asked for such an accommodation. To illustrate my point; I quote a peculiar case that came to my attention of a man conducting a business that had so much capital and the earnings of which were so large that they were never accustomed to ask for loans of any kind, but paid dividends and discounted all bills with cash at the bank. This man found that he could use \$10,000 to advantage, and went to one of the banks where he had maintained a cash deposit for years, and asked for a loan. The bank immediately began to ask him questions which made him so angry that he advised them to depart for a certain place where the climate is said

to be hot, and went to another bank, where he was accustomed to keep, also, a considerable cash deposit. This bank treated him no better than the first, which so annoyed him that he decided to go no further.

Where banks are accustomed to extend credit they will frequently loan large amounts on short notice. Where a company has existed for years without borrowing, any attempt to borrow immediately arouses suspicion. It is, therefore, undoubtedly good practice for a man, or company, to borrow money from time to time, just to get the financial community accustomed to loaning to him.

The factor most considered by banks in the extension of credit are the quick assets. Quick assets consist of stocks which have a fixed market value and can be disposed of at short notice, accounts receivable which are due from customers in good standing, and, of course, cash on hand and in bank. Many other assets which might be considered excellent cannot be taken into account, because they are of such a character that should the bank come into possession of these it might take considerable time and expense before they could be converted into cash.

In presenting these few elemental facts I realize that those who have made a study of credit conditions will find nothing new or instructive in my remarks.

Credit, as practiced today in the commercial world, is the foundation of all business operations of any magnitude. A thorough understanding of credit will be a valuable thing to you, because you will never know when the time may come when a knowledge of the opportunities afforded to obtain loans may affect very seriously your successful business career.

If, therefore, I have started any one thinking along these lines, I will feel that this paper has not been presented in vain.

THE DRUGGIST'S STRONGEST ASSET—CREDIT.

JOHN R. THOMPSON.

You might have \$25,000 in bank and still not be considered a desirable customer by merchants and manufacturers. On the other hand, your bank balance may be very small and cause you no embarrassment, if you are prompt in paying your bills. A strong credit is built up by the method you employ in making settlement, and not by a strong showing in assets.

A bank will lend money and a merchant will give credit more readily to the druggist who has a reputation for prompt payment, even though he may be only moderately rated, than to the man of reputed wealth, who is slow to liquidate.

Good credit is more to be desired, as it is more useful to the business man, than lots of property.

The firms who sell you goods are not interested in what you are worth particularly, but they are alive, indeed, to whether you do or do not pay when your bills are due.

The proportion of druggists who discount their bills is larger than one would suppose on first thought. It varies in different localities, like everything else. In

Pittsburgh about 80% of druggists discount. In Philadelphia about 60%, in New York 60%, in Boston 80%, in Baltimore 50%, in Chicago and most western cities about 75%. Cleveland and Cincinnati, both in the same state, vary from 80% in the former city to 65% in the latter.

These estimates apply only to city druggists. In the country districts the proportion is larger in the West and smaller in the East.

Take as a general average we will say about 70% of druggists discount promptly. This is a good showing compared with other business of comparative size. Grocers and other merchants do not discount in any such proportion. Department stores, with scarcely an exception, discount all bills.

The merchants in all lines who discount are the ones who are making money. Those who do not are the ones who simply exist or fail.

This is easily accounted for. The man who is prompt in payment is also prompt and forethoughtful in all his actions. He is a good buyer and will not overstock; he is a good salesman and will get rid of goods somehow which have ceased to be sellers; he is a good manager and will not allow extravagance and negligence to escape notice. He is a good business man all round *because* he discounts. He discounts because he is a good business man.

The direct profits to be made by discounting, aside from establishing credit, are large in themselves.

A druggist purchasing ten thousand dollars worth of goods a year will realize a hundred dollars if cash discounts are only one per cent and in many cases they are two and three per cent. To clear up a hundred dollars net by selling goods you must handle about a thousand dollars worth of merchandise.

The advantages of discounting, therefore, are: The direct profit in it; the building of credit, and the acquisition of good business habits. These three qualities will make business a success anywhere in the world.

DISCUSSION.

CHARLES HOLZHAEUER: "I used to be indifferent about paying my bills, but woke up one day to the fact that I was losing money by the practice and began discounting my bills. When I needed money I went to the bank and borrowed it.

"I think it is a subject that every one in the retail drug business should take to heart. If you have good credit with your banker you need not tell your jobber you are borrowing money to pay his bills, but just pay him. It is a good thing for a man in business to have a good line of credit, not only in one place but in several places.

"I remember a case similar to the one mentioned in the paper, where of two men one said, 'I will pay cash for all my goods and never borrow a cent'; the other said, 'I am going to borrow all I need.' When there was a financial crisis the man who paid cash for goods couldn't borrow a cent; the other man had no trouble for he had established his credit. My advice to any young man would be to borrow on short time and pay when due, then he can get more the next time and can get it for a longer term.

"The basis of credit depends very largely on the standing of a man in his community and the keeping of his word that he will pay at a certain time."

D. A. MILLER: "To the statement in Mr. Kline's paper that it is a good policy to borrow money, I would like to add my testimony that he is absolutely correct. As Mr. Holzhauer has advised, the young druggist should aim to establish a line of credit as soon as possible. The usual rule with banks is that at least 25 per cent. must be left in the bank. It is also a cardinal principle that loans must be paid punctually when due. It is the business of banks to loan money; it is their only method of making a profit.

"It is with great reluctance that wholesale druggists accept notes from their customers. One of the best things a retail druggist can possibly do is to establish a line of credit with one or more banks as soon as possible."

II. B. MASON: "Not only is it a source of profit to the druggist to borrow money and discount his bills, but there are numerous other ways in which he can profit. I don't suppose any fortune has been built up in this country out of what a man can save of his own earnings. It is the general rule that you prosper by using the other fellow's money. If you can get money at 5 per cent., make it yield 15 per cent. It is like a profit on merchandise, only quicker and better.

"The question has been raised as to what method banks use in loaning money. There is really no rule so far as I have been able to discover. A man who has not an established business usually finds it necessary to put up collateral. If he has a business in a good locality he can usually trade upon that business with the bank. I do not think that banks base their loans upon a certain percentage of deposit. Every banker is a law unto himself; if he likes the appearance of a man and knows his character to be 'A number one,' he will not hesitate to make the loan. As has been pointed out, the more you borrow money the easier it is to get it. There is no doubt in the world that most druggists fail to use their banks as they should use them."

"Most druggists are of the opinion that the borrowing of money is an unsafe practice. I know one druggist who has two or three stores who started in business twenty or thirty years ago with a prejudice against borrowing money. He has expanded rather largely and recently opened a new store, and suddenly found that he did not have quite enough ready money to swing the deal. Instead of doing as a wise man would have done and borrowing \$5,000.00, he did not go near the bank, but held up his creditors, with the result that the jobbers and others from whom he buys supplies have come to the conclusion that he is an unsafe risk and in two or three instances have refused to ship him. He is worth perhaps \$30,000.00 in excess of his liabilities, but as he was holding up his creditors on one pretext or another they were afraid they would not get their money and denied him credit. The man who borrows money at the bank, discounts his bills and keeps things going is in much better position to do business with his jobber and supply man."

S. H. SCALLIN: "There is one feature of borrowing that has not yet been touched upon. Some people when they go to the banker think it is none of the latter's business what the borrower is doing with the money; it is his business. He is not loaning his own but his depositor's money, and it is right that he should know something about the character of the investment you desire to make. In my portion of the Middle West, South Dakota, there is no requirement as to your bank balance; it is a matter of character and business ability. If these are all right the banker will go a long way to help you."

SOME EVERY-DAY PROBLEMS.

CLEMENT B. LOWE.

The Sunday closing movement is gradually attracting attention and some progress has been made towards shorter hours on this day, which to humanity is, or should be, a day of rest; especially is this so in the summer time when there is such an exodus of people from the cities. Those who do not close during the hot Sunday afternoons of summer are probably largely influenced by the business to be done in soda water, cigars and candy. In a long pharmaceutical experience the writer has never opened his soda fountain on Sunday; it has been his endeavor to restrict business on this day, rather than to attract it, he has felt that it would not

be Sunday to him if he were to serve behind a soda fountain on this day, and it has been a principle with him to not require of a clerk a service which he would object to rendering himself.

Sunday closing during the cooler months of the year is still with us an unsolved problem, outside of opening later and closing earlier. The prescription business in winter is often so heavy on Sunday as to keep those on duty rushed during the whole day; if the business was to be thrown into shorter hours it would require an increased force, this could not be drawn from the regular force without depriving them of their day of rest, and extra help is hard to get and frequently not worth much when obtained. Some of the reasons why the prescription business is frequently so heavy on Sunday are the following: Sundays are largely used by the laity as days for physical repairs, they put off treatment, sometimes under the pressure of necessity, until the first day of the week is reached, when they lay up for repairs and send for the doctor. Doctors themselves are often to blame for the Sunday traffic as they hold out inducements for visits from patients on this day. We have always admired the physician who had the wisdom and courage to announce "no office hours on Sunday," wisdom because he recognized his own spiritual and physical wants, and courage in the endeavor to satisfy them. In addition it implies that such a physician has been so successful that he does not have to cater to the Sunday traffic, he can make a living without it.

To sum up. First, while cooperation on the part of one's pharmaceutical neighbors is desirable, don't wait too long for it; be a leader and set the pace. Second, the attention of physicians might be called to the desirability of limiting their practice on the Sabbath. Third, a campaign of education for the laity might be entered into and an endeavor made to secure their cooperation.

Closely related to the shorter hours on Sunday, is the question of shorter hours during the week. To my mind there is not a question but what the hours of service in the drug store are unnecessarily too long. Some years ago the grocers of the City of Brotherly Love kept open every evening until 9 o'clock. On the surface this seemed praiseworthy as apparently they were catering to the necessities of their fellow men. However, it dawned upon them that these wants could be supplied in a shorter time, so that now they close their stores on five days of the week at 6 p. m. and no one is seriously inconvenienced.

If drug stores were closed earlier it might result in the wiser of our customers keeping on hand some of the simple remedies, for there is no reason why the drug store should be kept open long hours to relieve every possible head ache or stomach ache. The city store could close in the winter at 8 p. m., in the summer at 9 p. m.; country stores earlier.

The long hours spent in the store take the snap and too often the health out of both proprietor and clerks; they deprive them of social recreation and the opportunity for mental improvement. A strong argument for early closing is the fact that the present long hours of service deter many young men from entering the business; they can make as much in other lines of business where the hours of service are shorter. In conversing with the manager of a large druggist's sundry house, he told me of the long hours of service which he put in as a boy, and the resolution which he then made "to shorten the hours," if he ever had the oppor-

tunity. Gradually by his influence, the time has been materially lessened by his firm without injuring the business. In fact, they are getting more work out of a smaller force at the present time than they were ten years ago out of a larger one.

I think pharmacists themselves are largely to blame for the long hours of business. In their greed for business they have lengthened out hours of service until they have educated the public to believe that what was at first a favor is now a right. I have noticed at times young men rail against the long hours and other hardships of the business, and yet when they became proprietors of stores they have failed to practice what they formerly preached. I have heard a proprietor excuse the treatment of his clerks by saying, "I had a hard time when I was an apprentice and they are no better than I was."

The writer thinks a distinct gain was made for pharmacy by the efforts of the N. A. R. D. to reduce the pricing of prescriptions to a uniform basis, not that he, or probably the majority of pharmacists follow the N. A. R. D. plan in its entirety, but it has been quite a help in securing uniformity of prices. I have heard it said, but of course I don't believe it, that the plan in some stores years ago was to size up the customer and charge him as much as could be done without his squealing. I, however, know some cut-rate stores where the prices for prescriptions are very high. One of the principle advantages of the N. A. R. D. plan is that it puts a value upon "the know how." A long apprenticeship, a college education and a state board certificate should all have a money value, therefore the time spent in compounding a prescription should all be taken into account in fixing its price. I have wondered why pharmacists in giving a copy of prescription do not always mark upon it in the N. A. R. D. cost mark, its price; nine out of every ten pharmacists would probably honor it, and the tenth will quote a lower price when the cost mark is absent than when it is present. The extreme cutting of prices as carried on some ten years ago has given way generally to a more reasonable state of affairs—the "live and let live" motto has had a good effect. The value of cutting of prices is at least somewhat problematical; it depends largely upon the situation of the store. If the trade is largely of a transient character it may be necessary to attract attention by so doing, or at least by having bargain days or bargain sales; in a residential district it seems to me that it is better to attract attention by emphasizing quality and superior service, for trade won along the latter lines sticks. It is sometimes said that owing to the ability of the large stores to buy in quantity they can secure lower prices, and can therefore afford to cut, but it must not be forgotten that the expense of these large stores is enormous and they can no more live without a profit than the small store.

Pharmacists often needlessly throw away profits by getting into an ugly mood. A pharmacist, the owner of a long-established store in a prosperous suburb of a city, was noted for his high prices. Owing to the growth of this section of the city another store was established, which undertook to sell at the prices of the older druggist so as not to antagonize him, but the older druggist in order to kill off the newcomer commenced a sharp cutting of prices, which however failed of its purpose. Probably this druggist has lost more by these needlessly reduced prices than he did by loss of trade, as there was plenty for both.

One of the problems that confronts the pharmacist is that of "keeping sweet";

the business is one of so much minutia and detail, our employes do not always carry out their instructions, or customers are unreasonable in their demands, so that it is difficult at times to maintain one's mental equilibrium. To illustrate. On a very stormy day in winter when the slush was a foot deep, a lady called up and requested us to send at once for a prescription, put it up, and return it at once. As she lived a mile away, and off of a trolley line, I had to tell her that would be impossible on such an exceedingly stormy day to send at once, as we had to have some consideration for our help. She replied "that wasn't any of her business." I replied, "Directly it isn't, but indirectly it is, for if we are not considerate of our help we won't have any and then it would be impossible to get any medicine to you."

Another case was that of a wealthy gentleman whose child was sick. On such occasions he got quite excited. We had promised him the medicine by a certain time, but he seemed irritated at the necessary delay and called us up several times on the phone. I finally told him that he should have more patience. He replied, "I have no patience, and how can a man be patient when he has no patience."

One of the problems in the drug store is to do the "first thing first." I am convinced that failure to recognize the things that should be done, or deferring the doing of them because they are troublesome, or unpleasant, or because we are in a lazy mood, frequently gets us into trouble, and in time will cultivate in us such a habit of procrastination as to greatly interfere with our success.

Another problem is that of order. "Order is heaven's first law," and should certainly be also that of every well regulated pharmacy. To keep everything in order requires constant vigilance and cooperation of every clerk and assistant. I try to impress upon the boys in the store that the training they are getting is worth more than the salaries paid.

Perhaps I have brought enough problems to your attention to prove that our business is one demanding much thought and careful management. Any one who has become master of its details has received a training which would make him successful in many other pursuits.

DISCUSSION.

THOMAS F. MAIN: "My experience in the retail trade was so many years ago that it would not be a criterion for the business of today. At our store we opened an hour and a half in the morning on Sunday, an hour at noon, and an hour and a half in the evening, and limited sales as far as possible to medicines. The soda fountain was emptied on Saturday night, the show cases containing sundries, etc., were covered, and the keys of the cigar cases collected and deposited in the safe, so that no clerk would be tempted to break the rule on Sundays.

"When we first put the rule in operation the most persistent complaints were from cigar customers. We kept to our purpose, however, and during two years did not find that it resulted in any diminution in sales. I am convinced there is much truth in what Professor Lowe says. In a great many cases the druggist can, with little loss, limit the hours of work on Sunday."

F. C. GODBOLD: "Twelve months ago I concluded to close my store from one to five o'clock on Sunday. I have been closing it at one o'clock but reduced it to three o'clock. I close at one o'clock every Sunday and open at three o'clock, and don't know that I have lost anything."

P. H. UTECH: "I am in a city where there are ten stores. We formed an agreement that two stores were to keep open on Sunday, the others to close. The plan worked until we got around once. The last man who was to have the trade on Sunday said he was going to keep open and the rest could do as they chose about it, which broke up the combination. Finally, I concluded I was not going to be governed by what my competitors did. I got out a letter to physicians and hospitals announcing that I intended closing my store at certain hours on Sunday. Three-fourths of the physicians congratulated me on the stand. In looking over my records I find I have done more business every year since I followed the Sunday closing plan. If I cannot make enough money working six and one-half days in the week, the other few hours is not going to make any difference."

F. H. CARTER: "As to there being an absolute necessity of keeping open all day Sunday to sell drugs, that is largely a fiction. We have shortened our hours greatly."

DR. H. M. WHELPLEY: "When I was a drug clerk we followed the practice of closing from one to five, that is, we closed about one o'clock at night and opened about five o'clock in the morning, seven days in the week. I made some resolutions then about what I would do. I have changed my hours, but not in the retail drug business."

"The interesting part of this discussion is the evidence it affords that it depends upon the individual druggist fully as much as it does upon any combination. These various reforms along commercial lines in pharmacy can be brought about in their order if each man will act on his own initiative and not be too much afraid of what his neighbors are doing across the street."

F. E. STEWART: "I was brought up in Blair's drug store, Philadelphia, where we sold nothing but medicines on Sunday, and when I took charge of a store on Sixth avenue, New York, I adopted the same policy. These stores were closed absolutely on Sunday, and nothing was sold but prescriptions. We had the night bell and nothing but prescription work was done."

DR. JOHN B. BOND: "Everybody knows that the keeping open of a drug store on Sunday is not necessary. Every intelligent druggist knows it is a habit that can be easily gotten along without. The trouble is with the druggist himself. He is avaricious, and his soda water is in many places the best part of his business."

"So far as keeping open on Sunday is concerned, it is a question of avarice. It is not the medicine that is required, but the money-making desire of the proprietor. When you can convert him from that you can close on Sunday and not before."

DR. C. B. LOWE: "This question is a very important one, more important than many realize at the present time. On account of the increased educational requirements for entrance into pharmacy, the tendency is towards high salaries and young men will not go into a business which is so onerous as the drug business is under present conditions. Most of you know how difficult it is to get first-class clerks and, owing to the cutting of prices at the present time, it is not always easy to pay the wages asked."

"It would be easier to get first-class clerks at a fair salary if the requirements of service were not so great. The ordinary custom is for the clerk to work every other Sunday. That is a long day. If you do not believe it, try it yourself. My store is the only one in our section which closes on Sunday afternoon. I think it adds a certain dignity to the store and to the man that can afford to do it."

"When I bought my present store, the manager said to me when I proposed to close on Sunday, 'Doctor, you don't know what you are doing.' I said, this is a small business, suppose that it loses a little one day, I don't care whether I get it today or tomorrow so I get it in the year."

CHARLES HOLZHAUER: "The store I am conducting was started in 1843, and has never been open all day on Sunday. When I got possession of the store some of my friends said, 'You are foolish not to open this store all day Sunday, it would be the best day in the week for you.' I said, 'No, I will not do business on Sunday. I will go out of business before I will do it.' A friend of mine said, 'I wish I could do business as you do it, but I can't afford to.'

Sunday is the best day in the week for me.' That man kept on in his way and I in mine. He died a bankrupt and we are still doing business at the old stand.

"We could do an enormous soda water business on Sunday, for we are located on the best corner in the city. On the opposite corner we have a cut-rate store, in the same block on the other side another one, and directly across on the other corner another store, and they all run on Sunday. We don't do the volume of business that the others do, but I have a suspicion that at the end of the year my pocket is as fat as theirs. We are the only ones closed on Sunday, and we get 20 per cent. more on all our proprietaries than our competitors do.

"I would not advise anybody in the matter. It is a question that every one must settle for himself. I believe that any one who undertakes it will find that it is not such a losing game as would appear at first sight. I believe the druggist is entitled to his rest day. We have clerks that we never have to send away, and they are not very anxious to leave us. We get a better class of clerks because we do not run on Sunday, and I believe that we have a better standing in the community.

"We open two hours in the morning and two hours in the evening, because I do not want my customers to feel that I am indifferent to their wants. I believe the best trade appreciates it; they may be put to a little inconvenience, but they are put to the same inconvenience when you are closed at night and don't get angry at you.

"There is compensation elsewhere along the line; you feel more comfortable in the conduct of your business, and that you are treating your help as it ought to be treated. Next July I will have been in business in the same place for fifty years, and if I should be in business fifty years longer I wouldn't run on Sunday."

DR. H. P. HYNSON: "There are three aspects of this question: the moral one, the humanitarian and the business aspect. We older men, because of earlier associations, and because we thought it necessary years ago, are very apt to think it necessary now. There has been a material change in the administration of medicine. The physician who is well equipped now has with him in his hypodermic case and tablets all that is necessary to meet emergencies, and these having been met there is no greater necessity for quick medical application on Sunday than at night; and generally the better physicians do not prescribe a remedy for lengthened treatment until they have had time to study the case. I trust that you young men realize that conditions have changed and that you can close on Sunday much to your own advantage, to the advantage of your clerks, your family and, I believe, to your material interests as well."

H. D. KNISELY: "I have operated one retail drug store for twenty-two years, and have a prescription clerk who has been working in one position for ten years. That store has never run one single Sunday all day. The clerk attends to the store three hours on Sunday morning and I attend to it for three hours in the afternoon. This has been my custom for twenty-two years and I feel that I have been benefited by it and that the public has been properly served."

THE MOST DEADLY INSTRUMENT.

"The second most deadly instrument of destruction is the dynamite gun—the first is the human tongue. The gun merely kills bodies; the tongue kills reputations and, oftentimes, ruins characters. Each gun works alone: each loaded tongue has a hundred accomplices. The havoc of the gun is visible at once. The full evil of the tongue lives through all the years; even the eye of Omniscience might grow tired in tracing it to its finality."—*William George Jordan.*

Section on Historical Pharmacy

Papers Presented at the Fifty-Ninth Convention

ANTE-BELLUM DRUG PRICES.

P. HENRY UTECH, PH. G.

For the purpose of comparison and possibly, as reflecting the condition of the drug market of this country some fifty years ago, I desire to present for your consideration part of an old drug invoice which I came across recently, together with some comments and observations. The invoice in question was issued by a wholesale jobbing firm of Cleveland, Ohio, and bears date of January 27, 1861—more than half a century ago. On examination it will be found to contain some unique features, together with some interesting prices on the ordinary articles of commerce.

Among such as are particularly conspicuous, note the high price asked for potassium chlorate, \$1 per pound, while another similar salt of potassium, the sulphate, is quoted at 17 cents per pound, practically identical with the present market price. This extreme difference in cost is readily accounted for when one recalls the fact that the chlorate evidently figured in the manufacture of explosives which had been in great demand during this rebellious period of our country's history. But the greatest variation is in the case of oil of citronella, which as you will observe sold at \$7.50 per pint, while the present price is but 50 cents. Other extreme instances of unusually high prices are also noteworthy, e. g., lunar caustic \$2.20 per oz.; santonin \$2.30 per oz.; saffron \$3.00 per pound; ground cassia bark \$1.00 per pound; sulphuric ether \$1.50 per pint. Two other items, both produced mainly in the South, viz., rosin and oil of turpentine, furnish interesting comment. Scarcity of labor at this particular period caused these two products to reach exorbitant prices, perhaps the highest in their history, turpentine selling at \$2.75 per gallon and rosin at 18 cents per pound.

I herewith append the invoice, in part, picking out about twenty-five or so of the chief items and making comparisons as to present-day cost of similar items:

Name of Drug	1911 Price	1865 Price	Per Cent. of Difference
Licorice Root	\$0.18	\$0.28	56
Potas. Sulphate .....	.17	.17	00
Ipecac. Powd.	3.25	6.50	100
Bals. Copaiba .....	.75	1.00	33
Oil Citronella .....	.50	7.50	1400
Caraway Seed .....	.15	.30	100
Santonin	1.00	2.30	130
Saffron .....	.15	3.00	567
Resin .....	.03 ¹ / ₄	.18	454
Neatsfoot Oil	1.10	1.85	68

Oxalic Acid .....	.16	.68	325
Ground Cassia Bark.....	.18	1.10	511
Camphor Gum .....	.60	1.50	150
Jamaica Ginger .....	.30	.70	133
Cubeb Powd.....	.70	1.00	43
Potas. Chlorate .....	.16	1.00	525
Spirit Niter .....	.60	.85	42
Sulphuric Ether .....	.32	1.50	369
Iodine	3.20	8.75	174
Potas. Iodide	2.35	6.75	187
Oil Peppermint	3.50	5.50	60
Adhesive Plaster .....	.20	.40	100
N. C. Turpentine.....	.75	2.75	267
Lunar Caustic .....	.52	2.20	323
Alcohol	2.70	4.40	63

As will be observed, the decreased prices range from 35 per cent in the case of balsam capaiba, to 1400 per cent in the case of citronella. Taking the invoice as a whole and comparing it with present-day prices, the average increase in the twenty-five items herein enumerated is 161 per cent.

The foregoing in many instances would have shown a much greater variation had these comparisons been made a few years ago, prior to the passage of the Pure Food and Drugs Act. Since that date there has been a natural tendency to advance the cost of many drugs and chemicals, which hitherto were supposed to be of U. S. P. quality.

DISCUSSION.

A. W. MILLER: "If I remember correctly, in 1865, gold was selling at about \$2.50; everything was naturally two and one-half times the price it would have been if gold had been at par. About that time Oil of Citronella was sold at 50 cents an ounce, as a curiosity. The present price is 25 cents per pound by the drum in New York. Other items, such as turpentine and rosin, were sold at prices that now seem almost fabulous, such as \$50.00 per barrel for rosin. Turpentine sold for a time at \$6.00 a gallon, simply because communication with the south was barred by our army and navy. For the same reason Seneca Root and Virginia Snake Root sold at prices varying from \$4.00 to \$6.00 a pound; Opium \$25.00 per pound; Quinine \$20.00 an ounce. This was in great measure due to the fact that gold was then at a very high premium, or putting it the other way, our currency was considerably below the gold basis."

THOMAS F. MAIN: "It has occurred to me that while the invoice which has been presented to this section is about fifty years old, it might be interesting for the secretary of the section to obtain a copy of an invoice which Schieffelin & Company of New York have; they as you probably know are the oldest wholesale drug house in our city. They have framed in their office an invoice from their predecessors, J. Schieffelin & Company, dated, if I mistake not, 1801, priced in the currency of the country at that time which was pounds, shillings and pence. It would be extremely interesting to have a copy of that invoice preserved by the Association with this one of 50 or 60 years later."

P. H. UTECH: "Doctor Miller's reference to turpentine recalls an incident told me by a gentleman who was one of the first refiners of benzin in America. When this exorbitant price was being asked for turpentine, he conceived the idea of using benzin as a substitute and began placing it on the market for that purpose. Desiring to give it a specific character in the minds of the public he scented it with oil of citronella and named his new product Magnolia Turpentine. There was an enormous demand for it, and it sold at about seventy-five cents a gallon, although the price of benzin at that time was about fifteen cents a gallon.

He took every ounce of benzin manufactured in Philadelphia, buying in carload lots. Upon leaving Philadelphia he sold the recipe to a friend for \$1,000.00."

DR. H. M. WHELPLEY: "Speaking of high prices reminds me that the railway hospital at St. Louis once ordered an ounce of cocaine, the purchasing agent not realizing its expensive-ness, and the bill was something over \$240.00. They kept the article rather than admit that a mistake had been made in ordering. A charity hospital would not have been able to keep it, but a railway hospital could do it, and paid the bill. At that time cocaine was selling for \$1.00 a grain."

PROF. CHARLES CASPARI, JR.: "I would like to supplement the remarks of Dr. Miller, to show what a really enterprising retail pharmacist will sometimes do. Very shortly after the introduction of cocaine hydrochloride in Europe, a Baltimore pharmacist wrote Merck & Co., Darmstadt, Germany, and asked them to send him an ounce of the salt. They were afraid to send it and cabled the price, \$435.00 an ounce. The druggist cabled back, "Send immediately." He sold the last of the ounce at twenty-five cents a grain."

THROWING AWAY GOOD MONEY.

In all professions and trades, the man striving to reach the top in his particular line, must be constantly learning more about this field, and there are two ways in which he obtains his knowledge.

The first is by the constant association with his business and all its details.

This daily routine familiarizes him with his business to such a degree that it gets to be almost second nature for him to conduct it. But all this merely acquaints him with his business as it is, and in order to keep from getting into a rut and to advance he has to resort to a second course, which is the reading and studying of books and magazines which are devoted to his particular business.

How many druggists read their journals with the idea of getting education from them? Not to just "skim" through them, but to read them thoroughly. None of us know it all, and even if we should come near that mark we need to be continually reminded, and that is one important thing that these journals do; they keep reminding you of certain weak places.

No, it is not good policy, or good judgment, to throw your trade journal on the table or under it, without even taking off the wrapper, leaving it to its fate as waste paper.

What you lightly throw away is often information that cannot be measured in subscription values.

You throw away the summarized experience of men who have specialized along certain lines of drug store success.

You throw away the opportunity to keep in touch with your fellow craftsmen.

You throw away the opportunity to follow the Association meetings, to keep in touch with the bills going through legislature, which bear on the drug trade, to get good live pointers for increasing your business, to learn of many new formulas which in themselves alone will pay over and over the cost of the magazine.

These are but suggestions of the extent of your losses. Only the man who really makes a tool of his trade journals with which to work out a larger business success can actually realize how foolish it is to throw away such an instrument when it is actually thrust into his hands.—*The Apothecary*.

Contributed and Selected



GUSTAV LUDWIG RAMSPERGER.

The applause and honors that are bestowed by the public on men of prominence are not always justly divided, and many a man is raised to a high place of admiration during his lifetime, who hardly deserves such distinction, only to be soon forgotten after his death. The large and unthinking crowd will always be caught by men of daring deeds, of flattering words, of brazen appearance. Men that excel in warfare or showy enterprises, orators that catch their audience by smooth or bold phrases, or those who are endowed with a wonderful voice or other natural gifts, will receive the largest share of public applause; while the quiet thinker, the man who modestly works out hard problems of science or art to the benefit of thousands, the man of stern honor and strict adherence to his duty, no matter how arduous it is, will hardly be noticed.

These thoughts are not new, but they are apt to rise in our minds when we undertake to pay tribute to a dear friend who has stood before us during his whole life as a shining but modest, example and faithful worker, for the good and the

true in our profession. When, about six months ago, Gustav Ludwig Ramsperger, at the occasion of the celebration of the sixtieth anniversary of the German Apotheker Verein, sat next to me, and I had the honor and pleasure of introducing this venerable Nestor of pharmacy to the large audience of his fellow workers, scarcely anybody thought that this would be actually the last appearance among his colleagues. The sweet and cheerful words that he delivered that evening still resound in our hearts and we can hardly realize that this man, whom we were wont to see among us at all festive occasions, will never return. With him the last founder of the German Apotheker Verein, the oldest pharmaceutical association of this country, has passed away, and we might almost say that with him a chapter in the history of American pharmacy has closed. For he represented a time that now lies behind us, that many of us only know from the sayings of older men. New ideas, new commercial conditions prevail today, and many of the old men of thirty and forty—even of fifty years ago—are hardly able to understand this change of conditions. But our friend Ramsperger, though old in years, remained young in heart, and to the very last day of his life he understood and grasped the advances of his profession and took an active part in every development of his calling. He did this to such an extent that in the minds of nearly all of us he does not live as an old man of eighty-eight years, but rather as a vigorous man who works with us, who has been doing this for half a century, and has kept pace in the foremost ranks of his fellow workers.

Let me in a few words tell the history of his life. Gustav Ludwig Ramsperger was born the 13th of December, 1824, as the son of a public school teacher in Herrenburg, Württemberg. He received his first instruction in the high school of Ulm, and entered at the age of fourteen years the pharmacy of his uncle Berg, in Winnenden, as apprentice. In those days the position of apprentice in a German "apotheker" meant more than we can understand in this country. It was really a practical continuation of the schooling. The proprietor took an interest in his apprentices and gave them regular systematic instruction. They had to perform every part of the work of a pharmacy in a systematic way, never being allowed to pass on to a new work until the previous one had been thoroughly mastered. The apprentices, far from receiving a salary, paid for this instruction, and the time of apprenticeship varied from two to four years in different parts of Germany. At the end of his apprenticeship, Ramsperger passed his examination as assistant and spent a number of years in other parts of Germany and also in Switzerland, where he pursued his studies of French to such an extent that even in his old age he was perfectly conversant with that language. In 1849 he went to the University of Tübingen to finish his studies and to prepare himself for the final examination (Staat-examen), which he passed successfully in the year 1850. His favorite study was botany, and he had a wonderful memory for the names of plants, and could name their German, French, English, Latin, and pharmaceutical names with equal ease. This memory did not leave him, even in his advanced age.

After passing his final examination Ramsperger left Germany in 1850 and emigrated to America, hoping to find a greater field for his enterprise and ability. Before leaving, however, he married Miss Leonore Wiedersheim, the daughter of a pastor, so that his journey to America was really his wedding trip. There never

was a better mated couple and those who have met Mr. and Mrs. Ramsperger will remember the sweetness and gentleness which characterized them both, until about eight years ago death separated them. Soon after his arrival in New York Gustav Ramsperger acquired a small drug store in Oliver Street, which at that time was right in the business center of New York. His good judgment, his thorough knowledge of all parts of his profession, his amiable manners, and the ease with which he made friends, soon made him the leading pharmacist in his vicinity and his business was one of the most flourishing in New York. He stayed in Oliver Street for sixteen years, when the shifting of the business center and the residential part of the city made it advisable to move further uptown. He bought the share of his friend Faber, in the Faber-Balluff pharmacy, on the corner of Sixth Avenue and Thirty-eighth Street, and was equally successful in this new location. Having acquired a small fortune, Ramsperger thought of retiring, sold out his interest in the pharmacy and for some time devoted his energy to scientific work. But feeling that he was too young for permanent retirement, he again acquired a pharmacy in Brooklyn, at the corner of Fulton and Cumberland streets. Here he stayed a number of years, until, at his sixtieth birthday, he definitely retired from business. Since that day until his death he engaged in scientific and literary pursuits, and was active in a great many chemical and pharmaceutical societies as member and officer.

But the accumulation of a competency was not the sole object of his life. He came to this country not only to be independent and, if possible, to make money; he kept the ideals of his youth as a sacred gift and allowed them to influence him in his actions during his whole life. When he started in business and bought the "Doctor-shop," as it was called at that time, he did not forget the respected position that the German "Apotheker" has among his fellow citizens, and he at once made it one of the objects of his life to help raise the status of pharmacy and eliminate therefrom the foreign and improper belongings. He was fortunate enough to find many companions in this work, men who were inspired like himself, who had also left Germany displeased with the reaction after the great year of the revolution in 1848, and were looking for a broader and better field of usefulness. We must not underrate the spirit of the men of those days. They were really pioneers, they came to this country, not as adventurers, or because they were tired of steady work. They came here instigated by a high and noble ideal, men full of broadness, full of vigor, possessed of high education and ready to give to this country the best that men can bring. It was this spirit that brought men like Carl Schurz, Kudlich, Dr. Abraham Jacobi, Hugo Wesendonk, and others to America. Whatever they undertook was free from selfishness, free from smallness, and their influence was destined to be felt to the good of the country. Animated by such noble incentives Ramsperger and his friends founded the new society which during his whole life remained his favorite work, and for which he has done so much. In the many ups and downs of the Apotheker-Verein Ramsperger always stood firm and lived up to his ideal. He was always in the front ranks wherever pharmaceutical education and dignity were to be advanced. It is easily understood that a man of such inclinations would branch out and not remain within the limits of his home. So he became a charter member of the

New York State Pharmaceutical Association, was a member of the American Pharmaceutical Association, joined the New York College of Pharmacy and acted for a number of years as officer and trustee, his services finally being recognized by giving him the title of honorary vice-president. But while he devoted his principal energies to his profession, and lived for pharmacy, he did not forget other educational enterprises. His love for plants made him join the Torrey Botanical Club, and he was actively engaged in the founding and development of the New York Botanical Gardens. A very extensive and scientific collection of medicinal plants that he made during his life is now a part of the collection of the Botanical Gardens. He was also a member of the American Association for the Advancement of Science, and of the Museum of Natural History, besides belonging to a number of German literary and social associations. His charitable inclinations and warm heart for the welfare of his fellow men can best be shown by the fact that he belonged to twenty charitable societies, worked in all of them, and was president of several of them. And while he was liberal in sharing his earthly possessions with others, the leading trait of his character was his unpretentiousness and modesty, so that even in later years he would not leave the small residence in which he had lived so long, thinking it was good enough for him, until his children, by a ruse, made him leave it for more commodious quarters.

A man of such broad activity in his own profession, of such lively interests for the welfare of others, could not help being noticed and respected all over the country. Thus it was with Gustav Ramsperger. To know him was to love him. Those of us who were regular attendants of the meetings of the American Pharmaceutical Association will recall that in all the little excursions that were made through the country, where plants or flowers were to be found, Ramsperger was always surrounded by a circle of inquiring friends. He knew every plant, he knew the history of every plant, he knew everything that could be known about the plant, and the older of us will also recall that another respected German, a type similar to Ramsperger, Professor Maisch, of Philadelphia, was generally with him at such occasions, and the two were good and dear friends. Of Ramsperger it may be said that he had no enemies. His amiable disposition, his smiling eyes, his cheerful words, always acted as a soothing balsam on unruly spirits. He could not say a harsh word to anybody. He never offended anyone, and if he took a dislike to anyone, he simply avoided him. Thus he stands before us, one of the leaders of our profession, and it may well be worth while to put the example of his life before the younger generation, who often believe that the accumulation of money alone stands for success. Ramsperger's life was a shining example of a great man of his profession, not in the sense of glittering and boasting, but in the sense that the greatest man is he who does the greatest good to his fellow men.

He was a typical American of German birth, of the best calibre. While he remained a German in many of his ways, and preferred to speak German to any other language, and was proud of being a German, still he was thoroughly American, and understood the customs and laws of this country in a noble and ideal way. He was an American not by birth, which often means by accident, but by choice, he loved the country to which he emigrated and was proud to be a good and useful citizen. Therefore he kept all that was good, all that was true of his Fatherland, and brought it with him to this country as a valuable treasure and

gave this treasure to his new country in exchange for liberty and independence that he found here. The devotion to his work, his strong vigor in doing the right thing at the right time, the love for art and science, these were the treasures that he brought with him from Germany and distributed here freely. During the many years of his activity, this virility, this energy and endurance, was the most remarkable trait of his individuality. He seemed never to be tired. He could work for twenty-four hours a day and still be as cheerful and vigorous as when he began, and this power of endurance stayed with him. When in his eightieth year, he took a trip to the Orient in company with a great many others, it was Ramsperger who in Egypt, in Syria, in Palestine, was always at the head of the procession. He took all the little side trips that others only half as old would not undertake for fear of fatigue, and not satisfied with this, he would occasionally sit down and write long reports on his journey which, having been collected afterwards by his son, formed a wonderful narrative of this trip.

Thus Gustav Ludwig Ramsperger will remain in our memory as a noble representative of our profession, every inch a man, without boasting, without advertising, always cheerful, always willing to work, steadfast and true to his better self, respected and beloved by all who knew him.

WILLIAM C. ALPERS.

COMMERCIAL CALCIUM GLYCEROPHOSPHATE.

W. A. PUCKNER AND L. E. WARREN.

Glycerophosphoric acid and several of its salts were prepared by Pelouze¹ as early as 1845 while studying the constitution of glycerol. He produced the acid by heating glycerol with phosphoric acid and also with phosphoric anhydride. From the acid the barium and the calcium salts were prepared and the formula $2\text{CaO} \cdot \text{C}_6\text{H}_7\text{O}_5\text{PO}_3$ (old atomic weights) assigned to the latter. Pelouze reported that the calcium salt was less soluble in hot water than in cold. Soon after the synthesis of glycerophosphoric acid by Pelouze, it was obtained by Gobley² from egg lecithin by decomposing this substance with acids. Subsequently Liebrich³ discovered it in diseased brain tissue and in later time it has been found in a variety of animal tissues and excretions.

In 1876 Thudichum and Kingzett⁴ prepared several salts of glycerophosphoric acid from the acid obtained from the brain. They prepared the anhydrous calcium salt, ignited it and weighed the calcium pyrophosphate formed. From the results of these and of elementary analyses of the salt they assigned to it the formula, $\text{CaC}_3\text{H}_7\text{O}_6\text{P}$. They also prepared an acid calcium salt from the same source, the formula of which they believed to be $\text{CaC}_3\text{H}_7\text{O}_6\text{P} \cdot \text{H}_2\text{C}_3\text{H}_7\text{O}_6\text{P}$. In addition to the calcium salt they prepared the barium and lead salts but could not obtain

¹Compt. rend., 21, 718 (1845).

²J. pharm. chim. [3], 9, 161 (1846).

³Annal. Chem. Pharm., 134, 29 (1865).

⁴J. Chem. Soc., 30, 20 (1876).

the copper or the silver compound in a state sufficiently stable for analysis. The barium compound was remarkable in that, if prepared by precipitation from alcohol, it was found to be a hydrated alcoholate.

In 1894 Portes and Prunier⁵ described a process for preparing calcium glycerophosphate. These chemists first prepared the acid by heating 3 kg. of 60 per cent phosphoric acid with 3.6 kg. of glycerol at 110° C. for six days with occasional agitation. After cooling the mixture was saturated with calcium carbonate, the solution filtered and the calcium glycerophosphate in the filtrate precipitated by the addition of alcohol, in which solvent the salt is insoluble. The precipitate was dried in the air, dissolved in water, the solution filtered and the filtrate cautiously evaporated to dryness. The salt prepared by this process is described as a white, somewhat crystalline powder, containing 2 molecules of water of hydration. It is soluble in 15 parts of cold water but nearly insoluble in boiling water and in alcohol.

In 1894 Petit and Polonovsky⁶ examined a number of the salts of glycerophosphoric acid. They reported that the calcium salt is a white powder which is soluble in 30 parts of water at 20° C. Other properties of the calcium salt were described, some of which are given herewith:

On heating a saturated, aqueous solution of the salt a portion of the dissolved substance is precipitated in the form of scales. The aqueous solution of the salt has an alkaline reaction and is precipitated by the soluble oxalates, phosphates and carbonates and by the soluble salts of lead. The aqueous solution is not precipitated by magnesia mixture, by solution of ammonium molybdate in the cold, nor by solution of uranium acetate. If dried at 130° C. the loss should not exceed 3 per cent. If the salt be ignited the residue of calcium pyrophosphate should amount to from 55.5 per cent. to 56.5 per cent.

According to the formula given by these chemists the salt contains 1 molecule of water of hydration.

In 1897 Adrian and Trillat⁷ examined seven commercial specimens of calcium glycerophosphate. They found that the product as sold at that time varied much in physical and chemical properties. According to their analyses the several specimens contained calcium equivalent to between 19.5 and 24.5 per cent of calcium oxide (13.9 and 17.5 per cent of calcium), and phosphorous equivalent to between 26 and 33 per cent of phosphorous pentoxide (11.3 and 14.4 per cent phosphorous). Of six specimens two were neutral to litmus, one alkaline and three acid. The solubility in water varied greatly, ranging from 7.6 parts of salt in 100 parts of water for the acid specimens to 4.05 parts of salt in 100 parts of water for the neutral specimens. The portion soluble in alcohol, which consisted of glycerin and phosphoric acid, ranged from 1.8 to 4.2 per cent. These chemists prepared the salt in a state of great purity by a method which differed somewhat from that employed by Pelouze. When first prepared the salt is crystalline but it rapidly loses this property when exposed to the air. The pure salt is soluble in about 22 parts of water at 25° C. Analyses indicated the formula $\text{CaC}_3\text{H}_7\text{O}_6\text{P}$. They⁸ devised a method for the estimation of neutral glycerophosphates by titration with normal sulphuric acid, using methyl orange as indicator.

⁵J. pharm. chim. [5], 29, 393 (1894).

⁶J. pharm. chim. [5], 30, 193 (1894).

⁷J. pharm. chim. [6], 6, 433 and 481 (1897).

⁸Ibid. [6], 7, 163 and 225 (1898).

Astruc⁹ devised a volumetric method for the determination of the soluble glycerophosphates. He first neutralized the solution with a mineral acid, using methyl orange as indicator, and then titrated with standard alkali, using phenolphthalein as indicator. Determinations of the phosphoric acid by independent methods indicated that the results were slightly below the truth.

Cavalier and Pouget¹⁰ have studied the solubility of calcium glycerophosphate in water at various temperatures. They report that 1000 parts of a saturated, aqueous solution at 16° C. contain 7.9 gm. of the salt; at 36° the amount held in solution is 4.4 gm.; at 51°, 2.3 gm.; at 77°, 1.3 gm.; at 86°, 1.25 gm., and at 100°, 1.15 gm.

Eigelberner¹¹ prepared calcium glycerophosphate by the method used by Portes and Prunier. He estimated the calcium in an aqueous solution of the salt by precipitating as the oxalate, igniting and weighing as the oxide. The specimens which he prepared contained calcium equivalent to from 21.6 per cent to 22.5 per cent of calcium oxide, the theoretical quantity being 22.6 per cent of the calcium oxide. One commercial specimen of the salt yielded 33.05 per cent of calcium oxide.

Jensen¹² reports that he found a commercial specimen of the calcium salt which he believed to contain dicalcium glycerophosphate. By precipitation with ammonium oxalate in hot, very dilute acetic acid solution he obtained 23.5 per cent of calcium.

Except as chemical curiosities little attention was paid to the glycerophosphates until 1894, when they were introduced into medicine by Robin¹³ in the belief that they were of value in malnutrition. Their use spread rapidly and it was not long before they were recommended in a variety of diseases. One or more of the glycerophosphates is described in nearly every foreign pharmacopoeia. The therapeutic value of the glycerophosphates has been questioned and conservative writers on materia medica no longer advocate their extended use.

Recent experiments¹⁴ have shown that the animal organisms can build up lecithins, nucleoproteids and other phosphorus-containing compounds quite as readily from the inorganic phosphates as from organic phosphorus compounds. Hence it is probable that the glycerophosphates possess no therapeutic advantages over the inorganic phosphates.

The Council on Pharmacy and Chemistry having decided to consider calcium glycerophosphate, market specimens of different brands were purchased and were examined according to a number of provisional standards for the salt, which latter were chiefly based on the tests found in foreign pharmacopœias. These tests required the salt to be soluble in 30 parts of water. All but the merest traces of heavy metals were excluded. A limit test for carbonate, which permitted about

⁹J. pharm. chim. [6], 7, 5 (1898).

¹⁰Bull. soc. chim. [3], 21, 364 (1899).

¹¹Am. Jour. Pharm., 76, 212 (1904).

¹²Evans' Analytical Notes, 6, 18 (1911).

¹³Bulletin acad. med. [3], 31, 419 (1894).

¹⁴Fingerling, G.: Die Bildung von organischen Phosphoverbindungen aus Phosphaten, Biochem. Ztschr., 1912, xxxviii, 448; McCollum, E. V., and Halpin, J. G.: Synthesis of Lecithins in the Hen. Proc. Am. Soc. Biol. Chem., 1911, Jour. Biol. Chem., 1912, xi, xiii.

1 per cent of a soluble carbonate, was described and limiting tests for sulphate and chloride were also given which permitted about 0.1 per cent each of sodium chloride and of calcium sulphate. The permissible acidity amounted to about 0.7 per cent of free acid, calculated as crystallized citric acid. The alcohol-soluble material was limited to 1 per cent, the loss on drying over sulphuric acid to 5 per cent, the ash between 52.5 per cent and 55.7 per cent, and the calcium between 16.5 per cent and 17.5 per cent. The calcium was determined by oxidation of the organic matter with nitric acid and potassium chlorate, neutralization of the solution with ammonia water, solution of the calcium phosphate in citric acid and precipitation of the calcium with ammonium oxalate test solution.

The results obtained in the examination with the exception of the tests for heavy metals and for carbonates which were negative in each case are tabulated herewith:

TABLE I *

Brand	M. C. W.	P. W. R.	Schering	Squibb	Merck
Solution in Water (1 to 30)	Faintly Turbid	Very Turbid	Distinctly Turbid	Very Nearly Clear	Very Nearly Clear
Calcium	12.73	15.60	15.71	14.48	14.18
Chloride (NaCl)	1.80	0.97	Trace	Trace	Trace
Sulphate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$)	Trace	1.84	1.04	0.62	0.24
Alcohol—Soluble	0.66	0.73	3.52	6.34	4.47
Cubic centimeters tenth—normal alkali required for 1 gm. of substance †	None	4.47	6.06	12.86	13.66
Loss over sulphuric acid.....	4.47	3.54	3.23	2.91	2.99
Residue on ignition.....	51.93	51.01	50.69	47.72	47.84

All of these findings were submitted to each of the manufacturers whose product had been examined, but the key to the table of results was supplied to the individual manufacturer only so far as to enable him to identify his own product. At the same time each of the several firms was invited to criticize the tests in general and the findings for its own product.

While awaiting the criticisms of the manufacturers further experimental work was carried out on the calcium determination. It was found that by rendering the calcium glycerophosphate completely soluble by means of small quantities of citric acid, the calcium might be estimated with a fair degree of accuracy without the preliminary oxidation of the glycerophosphate. The method is given herewith:

From 0.3 gm. to 0.5 gm. of calcium glycerophosphate is weighed into a beaker, dissolved in 50 cc. of a 1 per cent. solution of citric acid, the solution filtered, 10 cc. of ammonium oxalate test solution added, the mixture warmed on the water bath for half an hour, allowed to stand for 24 hours, the precipitate of calcium oxalate collected, heated to low redness, cooled, the residue of calcium carbonate moistened with ammonium carbonate test solution, dried, again heated, and weighed.

In general the results obtained were slightly higher than those by the oxidation-

* The initials at the heads of the several columns correspond to the products sold by the following firms:

M. C. W.—Mallinckrodt Chemical Works.
P. W. R.—The Powers-Weightman-Rosengarten Co.
Schering—Schering & Glatz.
Squibb—E. R. Squibb & Sons.
Merck & Co.

† For the most part the acidity appears to be due to citric acid.

precipitation method. The determination of the amount of loss sustained by the salt when dried over sulphuric acid gave results that appeared to be of but little value in determining either the composition or the quality of the product. This test was evidently prescribed with the view of limiting the amount of adherent moisture rather than water of hydration. There is considerable confusion in the literature concerning the temperature at which the salt becomes anhydrous. Petit and Polonovsky, as noted earlier in this paper, prescribed a limit for loss on drying at 130°C. , these chemists evidently believing that all of the water is driven off at that temperature. Astruc has reported that a temperature of from 150°C. to 160°C. is necessary for the determination of the water. The French Codex states that the salt becomes anhydrous at about 120°C. *but directs that the product shall be dried at 150°C. before analysis.* Hager (*Handbuch Pharm. Prax.*, I, 96) states that the salt loses its water of hydration at 130°C. Concerning this we have made a few preliminary tests upon specimens containing little or no citric acid. These indicated that, after drying to constant weight at 130°C. , no further loss took place if the temperature were raised at 150°C. As a drying temperature of 130°C. is thought by several of the authorities to be sufficient to drive off all the water of hydration and, as our preliminary tests appeared to confirm the belief, we chose that temperature and dried all of the specimens examined accordingly.

As the calcium content of the several specimens varied considerably it seemed worth while to determine the phosphorous also. This was carried out as follows:

From 0.3 gm. to 0.5 gm. of calcium glycerophosphate is weighed into a Kjeldahl flask, 10 cc. of a mixture of equal parts of nitric acid and sulphuric acid added, the mixture heated until oxidation is complete, a little more of the acid mixture being added with continued heating if necessary, the solution diluted with 50 cc. of water, 5 gm. of ammonium nitrate added, the mixture warmed, shaken and allowed to stand on the water bath until precipitation is complete, followed by 150 cc. of ammonium molybdate test solution, the precipitate dissolved in a slight excess of ammonia water, the solution filtered, 10 cc. of magnesia mixture test solution added, the mixture stirred, allowed to stand for 12 hours, the precipitate collected in a tared Gooch crucible, washed with 1 per cent. ammonia water, dried, heated to low redness for 15 minutes, cooled and weighed.

The results for calcium by the second method, for loss on drying at 130°C. , and for phosphorus are given in the appended table:

TABLE II

Brand	M. C. W.	P. W. R.	Schering	Squibb	Merck
Water (Loss at 130°C.)	8.94	9.17	10.72	10.73	9.92
Calcium	12.84	15.83	15.65	15.21	14.95
Phosphorus	13.42	12.05	11.73	11.38	11.40

Pure calcium glycerophosphate, $\text{Ca}(\text{C}_3\text{H}_7\text{O}_6\text{P} \cdot \text{H}_2\text{O})$, should be soluble in water, should have a faintly alkaline reaction and should be practically free from chlorides, sulphates and alcohol-soluble matter. It should contain about 17.5 per cent of calcium and 13.6 per cent of phosphorus, and should yield about 55.7 per cent of ash on ignition. The results of the analysis show that none of the specimens examined were completely soluble in water. Those which were most nearly completely soluble were such as contained considerable quantities of an organic acid. The loss at 130°C. ranged from 8.9 per cent to 10.7 per cent, the theoretical loss for a salt containing 1 molecule of water of hydration being 7.9 per cent. Two specimens contained considerable amounts of chloride and four of them

contained considerable quantities of sulphate. One specimen (Powers-Weightman-Rosengarten brand) contained both chloride and sulphate. The alcohol-soluble material ranged from 9.66 per cent to nearly 7.5 per cent, the greater part of it, apparently being citric acid. The calcium content ranged from 12.6 per cent to 15.8 per cent, phosphorus from 11.4 per cent to 12.1 per cent, and the residue on ignition from 47.7 per cent to 51.9 per cent. The Mallinckrodt specimen contained considerable sodium. Since the calcium content of this specimen is considerably below the theory for calcium glycerophosphate and the phosphorus content is about normal for that salt, it appears probable that sodium glycerophosphate is present. In short, all of the specimens varied decidedly in one or more particulars. On comparing the results found in the examination with the standards prescribed in the foreign pharmacopœias and pharmaceutical commentaries it was found that none of the specimens examined complied with all of the requirements in any one of these authorities.

Concerning the tests suggested by us the several firms replied in general that the requirements were considered to be too stringent. Some believed that the standards extant in the foreign pharmacopœias and pharmaceutical commentaries were sufficient although, as we have already stated, our analyses had shown that none of the specimens examined complied with all of the requirements in any one of those authorities. Others stated that it was difficult to formulate standards of purity and strength for the substances because of the lack of uniformity in the commercial products. Still others thought that since the salt probably is to be described in the next revision of the U. S. Pharmacopœia, it was scarcely worth while to improve the product at this time.

From the Laboratory of the American Medical Association.

Nature is very un-American. Nature never hurries. Every phase of her working shows plan, calmness, reliability, and the absence of hurry. Hurry always implies lack of definite method, confusion, impatience of slow growth. The Tower of Babel, the world's first skyscraper, was a failure because of hurry. The workers mistook their arrogant ambition for inspiration. They had too many builders,—and no architect. They thought to make up the lack of a head by a superfluity of hands. This is a characteristic of hurry. It seeks ever to make energy a substitute for a clearly defined plan,—the result is ever as hopeless as trying to transform a hobby-horse into a real steed by brisk riding.—*William George Jordan.*

Reports of A. Ph. A. Committees

THE PROGRESS OF PHARMACY.

Submitting herewith the *first installment* of Abstracts from the Report on the Progress of Pharmacy during the year 1912, it becomes necessary to explain that all references to the reports prior to the report 1911, which is now in the printer's hands, will, as heretofore, be indicated by the word "Proceedings" (1910, 1909, etc.), while the references to the reports published since 1910 will be indicated by the word "Report" (1911, 1912, etc.) Similarly, references to the Journal of the Association will be indicated by the word "Journal" (Jan., Feb., March, 1912, etc.) References to the Yearbook of the Association, however, if not part of the "Report," will be indicated by the abbreviated title "Yearbook A. Ph. A."

C. LEWIS DIEHL, *Reporter*.

Ambrette Seed Oils Properties and Constants.—It is well known that the normal distillate of ambrette seed is of a wax-like consistency, due to the large proportion of highly molecular fatty acids which it contains (principally palmitic acid), and that the liquid oil, from which all odorless admixtures is removed, is obtainable only by special treatment.

Schimmel and Co. have determined the constants in both of these:

Normal, Solid Distillate: Sp. gr. at 40°, 0.891 to 0.892; acid val., 75 to 123; ester val., 66 to 113; solid pt., 38° to 39°; insoluble in 10 vol. of 90% alcohol.

Liquid Oil: Sp. gr. at 15°, 0.9088 to 0.9123; opt. rot. 0°14' to 1°19'; refr. index., 1.47421 to 1.47646; acid val., 0 to 2.4; ester val., 167.7 to 180.5; soluble in 3 to 6 vols. and more of 80% alcohol.—Schimmel's Rep., April, 1912, 25.

Ananas Sativa: Analysis of the Fruit and Plant.—E. V. Flack, Government Analyst, has subjected pineapples and the plant grown in the Bathurst District of the Cape Colony, to

proximate analysis, with the following results:

	<i>Fresh Fruit</i>	<i>Fresh Plant</i>
Moisture	83.86%	81.45%
Crude Fat	1.11%	0.17%
Proteins	0.49%	0.75%
Crude Fibre	0.33%	3.25%
Nitrogen-free Ex-tract	13.51%	12.02%
Ash	0.70%	2.06%
Silica	0.069%	1.12%
Lime	0.047%	0.121%
Potash	0.358%	0.356%
Phosphoric Oxide...	0.024%	0.029%

The pines were grown in a sandy loam overlying gravel.—Chem. News, March 1, 1912, 99.

Benzaldehyde: Detection of Chlorine.—Dr. G. Heyl points out some of the defects of the G. P. V. process for the detection of chlorine in benzaldehyde, which are not removed completely even by the various modifications that have been suggested by Herzog and others. He therefore suggests the so-called "lime method" for the detection of the halogen, which has proven reliable when carried out as follows: About 1 or 2 gm. of calcium hydroxide (which, of course, must be free from Cl. and is so obtainable) is placed into a porcelain crucible, 10 to 15 drops of the benzaldehyde are added, and thoroughly incorporated with the hydroxide by means of a glass rod. The mixture is covered with a thin layer of calcium hydroxide, and is then carefully heated in the open flame, finally to redness. After cooling, the contents of the crucible are transferred to a beaker, 5-6 cc. of water carefully added, followed by nitric acid in faint excess, and the solution is filtered through chlorine-free filter paper (or glass wool). In the presence of chlorine, turbidity, greater or less according to the quantity, is produced on the addition of silver nitrate solution. By this method the presence of chlorine is sharply determined in a mixture of 1 drop of benzol non-chloride with 50 gm. of pure benzaldehyde.—Apoth. Ztg. XXVII (1912, No. 6, 49-50).

Benzaldehyde: A Convenient Method of Detecting Chlorine.—Referring to the above method proposed by Dr. Heyl, which doubtless yields reliable results, Prof. E. Rupp recommends the following simple method, which depends upon the fact that substances containing chlorine, when burned upon a surface of cupric oxide, produce cupric chloride, the smallest traces of which imparts a green color to a non-luminous flame. To carry out the reaction a section of copper wire or, better, a strip of copper netting about 0.5 cm. wide (with 1 mm. meshes), is rolled closely-spirally at one end so as to form a roll about the thickness of a pea. This is drawn several times through a non-luminous gas-, benzin- or alcohol flame, so as to form a surface of cupric oxide, and until all yellow or green color (due to NaCl) disappears. The reagent thus produced, after cooling somewhat, is simply dipped into the flame and, after allowing the benzaldehyde to burn up completely out of the flame, it is introduced into the non-luminous part of the same. If this now shows green luminosity, chlorine is present in the sample, the duration and intensity depending proportionally to the amount of chlorine present and the quantity of benzaldehyde adhering to the spiral, which was experimentally found to be about 0.3 gm. in a wire-net spiral, or 0.1 gm. in a wire spiral of the dimensions indicated.—Apoth. Ztg. XXVII (1912), No. 10, 92.

Copaiba: Estimation of B-Caryophyllene as a Test for Adulteration.—By acting on B-Caryophyllene with nitrogen tetroxide (NO_2), a crystalline nitro-derivative of caryophyllene, $\text{C}_{22}\text{H}_{36}\text{N}_2\text{O}_6$, melting at $159.5^\circ\text{--}160^\circ$, is obtained. This compound is found very useful for the detection and estimation of B-Caryophyllene in volatile oils, by Deussen and Eger, who have applied it to the examination of the following oils:

(1) Caryophyllene from clove oil, (2) Para copaiba oil, (3) Maracaibo oil, and (4) mixtures of Para copaiba oil with gurjun oil and African copaiba oil. Three grammes of the oil is dissolved in 25 cc. of absolute ether and treated with nitrogen oxide. As soon as the separated nitro-compound begins to agglomerate at the bottom of the vessel, the reaction is stopped, and the precipitate filtered off, washed with ether, dried on a porous tile, and weighed. The direction in which this reaction may eventually be of considerable value

is shown by the following figures, giving the amount of crystalline nitro-compound obtained:

Oil	Nitro-Compound
1. Caryophyllene (from stem oil)	yielded 50-52%
2. Caryophyllene (from bud oil)	yielded 50%
3. Para copaiba oil (rotation— 11.75°)	yielded 9.5-10%
4. Para copaiba oil (rotation— 14.5°)	yielded 15%
5. Para copaiba oil (rotation— 10.25°)	yielded 15%
6. Para copaiba oil (rotation— 19.40°)	yielded 15-16%
7. Maracaibo copaiba oil (rotation— 3.9°)	yielded 5-6%
8. Maracaibo copaiba oil (rotation— 10.20°) ..	yielded 3%
9. Maturin copaiba oil (rotation— 10.30°)	yielded 8-9%
10. No. 6 with 10% gurjun.	yielded 13.3-14.3%
11. No. 6 with 20% gurjun.	yielded 11.7-11.7%
12. No. 6 with 30% gurjun.	yielded 10.7-11.7%
13. No. 6 with 50% gurjun.	yielded 7.7- 8.7%

The authors recommend Turner's reaction for the detection of gurjun balsam in copaiba. This consists in dissolving 3 drops of the sample in 3 cc. of acetic acid with 2 drops of a freshly prepared 10 per cent. solution of sodium nitrite, then pouring the liquid onto a layer of concentrated sulphuric acid. Within half an hour a deep violet color develops in the acetic-acid solution if gurjun balsam be present.

The authors also recommend and describe a reliable method for the detection of African copaiba, which is based on the difference in the melting points of the dihydrochloride of B-caryophyllene ($60^\circ\text{--}70^\circ$) and of the dihydrochloride of cardiene ($117^\circ\text{--}118^\circ$), produced by the action of gaseous HCl on the solution of the oil in absolute ether. In pure Para copaiba oil, the first mentioned is principally present, whereas in African oil cardiene dihydrochloride largely predominates. Chem. and Drug, May 25, 1912, 779; from Chem. Ztg., 1912, 561.

Kava Resin: Estimation in Admixtures with Sandal Oil.—The resin of kava roots has during recent years been frequently employed as an antgonorrhoeicum in combination with sandalwood oil, such combinations being usually exploited as trade-named specialties. Having frequent occasion to determine the resin content in such mixtures, Dr. Anfrecht has experimented with the object of finding a reliable method for its

estimation, the only published method being one given in the 1911 report of J. D. Riedel, by an unnamed author, which is based upon the sparing solubility of the resin in petroleum ether. Preliminarily, Dr. Aufrecht prepared an alcoholic extract, and from this by extraction with ether the crude resin, amounting to 5.70 per cent. of the kava root employed when completely dry. This crude resin had the following composition Soluble in petroleum ether, 5.05 per cent.; resin (insoluble in petroleum ether), 91.5 per cent.; extractive substances, 3.39 per cent.; ash, 0.06 per cent.; volatile oil, traces. After trying the method proposed in Riedel's Report, and finding it unreliable, the author eventually devised a method which he recommends as reliable. This consists in saponifying the mixture of kava-resin and sandal oil with alcoholic potash, heating on a water bath to remove the alcohol completely, dissolving the saponified mixture in boiling water, transferring the solution and rinsings into a flask, acidifying it with dilute H_2SO_4 , and distilling until the distillate passes perfectly clear. The residual acid-resins in the flask, representing both the free resin and the esterified resin, are then collected on a tarred filter, washed, and dried to constant weight. In the experiments recorded, the method is found to be correct within 1.51 per cent., as an average of three determinations.—*Pharm. Ztg.*, LVII (1912), No. 10, 92-93.

Methyl Alcohol: Detection in Alcoholic Preparations.—A. Hellriegel, after discussing various methods for the detection of methyl alcohol in ethyl alcohol and its preparations, recommends the following simple method as being particularly suitable for the use of pharmacists. The preparation is subjected to distillation and the distillate is fractionated, the portion distilling at 64° to 67° containing the methyl alcohol. This fraction is then boiled for three hours, under a reflux condenser, with one-half its weight of quicklime, whereby the greater part of water that may be contained in it combines with the lime. The condenser is then reversed and the distillate collected in a dry flask, whereupon the boiling point of the fraction is determined. Pure oxalic acid, dried at 100° , is now dissolved in the distillate, and the solution is boiled about one hour, when upon cooling, oxalic acid dimethylester crystallizes out. The crystals are collected on a suction filter and their melting point, which

should be 54° , is determined. The corresponding diethylester being a liquid, the methyl alcohol is thus characteristically differentiated from ethylalcohol.—*Pharm. Ztg.*, LVII (1912), No. 1, 7.

Methyl Alcohol: Detection in Ethyl Alcohol.—Referring to the above method for the detection of methyl alcohol in alcoholic preparations proposed by Hellriegel, C. F. Reichhardt suggests an equally simple, reliable method, which depends on a color reaction produced by means of oxalic acid and sodium alizarinsulphonate on the respective alcohols, provided that the distillate contains not less than 90 per cent. of ethyl alcohol. The test is carried out as follows: To 2.5 cc. of the distillate, 1 cc. of NaOH (G. P. solution) is added, followed by 3 drops of a 1 per cent. solution of sodium alizarinsulphonate, and the test-tube is rotated until a clear, blue-violet mixture results. Then 0.3 to 0.35 gm. of dry oxalic acid is added, and the mixture vigorously shaken several times. If alcohol is present, the color remains unchanged; but in the presence of methylalcohol a dirty-violet colored precipitate, of gelatinous consistence, forms on the walls of the test-tube, changing to a yellow color in the course of a few hours.

Another equally effective method is proposed by Dr. Aufrecht, who refers also to that proposed by Hellriegel. This method is based on the observation of A. Trillat that when methylalcohol is oxidized with potassium dichromate and sulphuric acid, methylal ($CH_3OCH_2OCH_3$) is formed, and this, when heated with dimethylaniline, yields "tetramethyldiamidodiphenylmethane," which by oxidation, even in great dilutions, develops a magnificent blue color, becoming more intense on heating, while the blue color produced with ethylalcohol under the same conditions disappears rapidly on heating.—*Pharm. Ztg.*, LVII (1912), No. 4, 32.

New Pill-Excipient: Practically Universal Utility for Massing.—P. B. Phillips discusses the difficulties in deciding upon the proper excipient to use in making pill-masses, and gives a number of examples. He has found, however, that the nearest approach to a universal excipient is obtained according to the following formula and directions:

Gelatini	5 ii
Glycerini	5 ii
Pulv. sacchari.....	5 iii
Aq. dest. ad.....	5 i

Place the gelatin in a tarred evaporating dish with about $\frac{1}{2}$ ounce of distilled water, and allow to stand for some minutes. Next add the glycerin, heat the mixture until the gelatin is dissolved. Then add the sugar in powder and continue the heating until the product weighs 480 grains. Transfer the contents to a covered pot, and stir until cool. As the liquid begins to set to a solid, stir briskly with a spatula in such a way as to work a certain amount of air into the product. This serves the double purpose of making the preparation whiter and softer. The author has given the name "Massol" to this new excipient, which keeps well and needs no preservative.—*Chem. & Drugg.* April 6, 1912, 53.

Nor-Hyoscyamine and Nor-Atropine New Solanaceous Alkaloids.—F. H. Carr and W. C. Reynolds announce the discovery of two new alkaloids obtainable from solanaceous plants, namely, nor-hyoscyamine and nor-atropine, which have hitherto eluded researchers, but the chemical identity of which is established by ample proofs of their constitution.

Nor-hyoscyamine ($C_{17}H_{21}NO_3$) differs from hyoscyamine ($C_{17}H_{23}NO_3$) only in that the methyl group, CH_3 , is replaced by an atom of hydrogen. It was first isolated from *Scopolia japonica*, but has since been obtained from *Datura Metel*, *Datura Meteloides*, and *Duboisia myoporoides*. It also occurs in *Datura fastuosa* and *Mandragora zernalis*, and probably in other solanaceous plants. Nor-hyoscyamine is crystalline, melts at 140° C., and forms well crystallized salts. Its specific rotation is -23° , while that of the basic ion contained in its salts is -33.8° . The ratio between these two figures is 1:1.47, which agrees with that of hyoscyamine. As regards

Nor-atropine, just as hyoscyamine is converted by the action of alkalis to its racemic modification atropine, so by the same treatment nor-hyoscyamine is converted into its racemic modification nor-atropine. Nor-atropine melts at 113° C., and forms a hydrate melting at 73° . By the action of methyl iodide upon it atropine was synthesized, thus proving its relationship to the latter. Subjected to physiological tests, by Dr. Laidlaw of the Wellcome Research Laboratories, the two new alkaloids were found to have about one-eighth the mydriatic effect of the correspond-

ing hyoscyamine and of atropine respectively. Finally, it may be mentioned that the

Pseudo-hyoscyamine, isolated by E. Merck from *Duboisia myoporoides*, is considered by the authors to be nor-hyoscyamine contaminated with a little hyoscyamine.—*Chem. and Drug.*, May 11, 1912, 760.

Oil of Aframomum Angustifolium: A New Volatile Oil.—Schimmel & Co. have distilled from the seed of a species of cardamom indigenous in German East Africa, received from Usambara, a volatile oil in a yield of 4.5%, which proved to be similar in every respect with the oil obtained from Cameroon-cardamoms, derived from *Aframomum Duncalli*, K. Schumann, while the cardamoms now under consideration are identified by Schumann as a distinct species, namely, *Aframomum Angustifolium*, K. Schum. (N. O. Zingiberaceae). The new oil was colorless; sp. gr. at 15° , 0.9017; opt. rot., $-16^\circ 50'$; refract. index, 1.46911; acid v., 0.4; ester val., 4.2; soluble in 6 vols. and more of 80% alcohol. Its aroma, however, cannot be compared with that of Ceylon cardamom oil, and owing to its high cineol content it reminds rather of cajuput oil. The quantity of oil at disposal was unfortunately too small to estimate its constitution with any exactitude.—Schimmel's Rep., April, 1912, 136.

Physostigmine: Derivatives.—It has been shown by Ehrenberg that when physostigmine is heated with alkalis in the absence of air, a new base is formed in addition to carbon dioxide and methylamine. This new base, designated—

Eseroline, has been the subject of investigation by Dr. A. H. Salway in order to gain further information regarding the constitution of physostigmine. Eseroline was found to be a mono-acidic tertiary base, which contains one nitrogen atom attached to a methyl group. It yields a hydrochloride, $C_{11}H_{15}ON_2 \cdot HCl$, melting at 212° C., and a picrate melting at 195° C. The oxidation products of eseroline are:

Rubreserine, $C_{11}H_{15}O_2N_2$, a fine, deep-red crystalline compound, formed when eseroline was allowed to absorb two atoms of oxygen in the presence of alkali. It is a neutral substance, which, however, yield salts with both acids and bases. The hydrochloride, aurichloride, picrate, and silver salt of rubreserine were described.

Coculeserine—the so-called "eserine blue"

—obtained by the slow oxidation of physostigmine, was isolated for the first time in a pure condition, and designated coeruleserine. It dissolves in water, giving, even in dilute solutions, an intensely blue color. Acid solutions of coeruleserine are dichroic, being blue by transmitted light and carmine-red by reflected light. Coeruleserine has the formula $C_{17}H_{22}O_2N_2$, and yields salts with two equivalents of acid. Its formation is undoubtedly due to condensation of the degradation products of the alkaloid.—*Chem. and Drug.*, May 11, 1912, 700.

Storax: Modification of Assay Process for Cinnamic Acid Content.—Referring to a recent article in "Perfumery and Essential Oils," in which, after drawing attention to the unsatisfactory quality of storax imported into England during the last decade, a process for the determination of the cinnamic acid content is given. C. A. Hill and T. T. Cockling suggest certain modification of this process for reasons explained, and record figures for recently imported storax, showing that while genuine storax of excellent quality can still be obtained, others that come to the market are little better than rubbish. The modified process adopted by the authors is as follows:

Saponify 2.5 grams of the prepared storax by boiling with 25 cc. of seminormal alcoholic potash and 20 cc. of alcohol for one hour under a reflux condenser; evaporate the alcohol and dissolve the saponified mass in 50 cc. of water.

Shake this aqueous solution with 20 cc. of ether, allow to stand, and separate the ethereal layer; wash the latter with 5 cc. of water, mix the washings with the aqueous solution, and reject the ethereal liquid.

Acidify the aqueous solution and extract the mixed cinnamic and resin acids by shaking out with ether four times. Transfer the ethereal solutions, after washing them with water, to a 200-cc. flask, and distill off the ether. To the residue add 100 cc. of water, connect the flask to the reflux condenser, and boil vigorously for fifteen minutes; pour off the hot liquid through a filter, allow to cool to 15°, and collect the crystals of cinnamic acid on a counterpoised filter. Repeat the extraction with the filtrate at least three times, or until no more cinnamic acid is obtained. Press the filter and crystals between blotting paper, and either dry *in vacuo* over

sulphuric acid and weigh, or dissolve in alcohol and titrate with decinormal sodium hydroxide. To the result obtained add 0.03 grams for solubility of cinnamic acid in water.

Two samples from recent importations by the "British Drug Houses, Ltd.," showed: Acid val., 112.2 and 113.1; ester val., 91.3 and 92.8; sapon. val., 203.6 and 205.9; and contained 5.97% and less than 5% of cinnamic acid respectively. These were probably adulterated with resin as well as impoverished (by the abstraction of the odorous constituents); while five other samples from the same source (all of them separate consignments) gave the following constants, proving to be genuine storax: Acid val., 58.3-76.4; ester val., 118.2-145.9; sapon. val., 194.6 to 204.2, respectively. The cinnamic acid content was: 30.68%, 27.51%, 22.25%, 21.6%, and 26.61%.—*Chem. and Drug.*, March 16, 1912, 412-413.

Unguentum Adhæsivum ("Klebesalbe"): *Useful Formula.*—Dr. Dreu highly recommends the following formula for an adhesive salve, both on account of its composition and consistency, which he has found extremely useful for the treatment of all chronic infiltrations of the skin, whether of exzematous or psoriatic nature:

R	Acid salicyl	10.0
	Pyrogallol	20.0
	Liqui. carbon. deterg.....	20.0
	Zinc. oxydat	20.0
	Sapon virid	25.0
	Adip. lan. anhydric.....	25.0
	M. D. S. Ung. adhesiv.	

The ointment has a white-grey color, but soon acquires a black color on the surface, while the interior retains its grey color. Its adhesive qualities, however, are remarkable, and superior to that of any other ointment. Consequently it adheres persistently to the skin, a desideratum particularly in the treatment of eczemas.—*Pharm. Ztg.*, LVII (1912), No. 3, 27; from D. Med. Wsch.

Vanadium Compounds: Review, with Particular References to Their Therapeutic Use.—The numerous chemical investigations of vanadium and its compounds that are referred to in the "Report" of 1911 are not alone interesting from the chemical and technical standpoint, but are reflected also in the domain of medicine by the pharmacological investigations that have been made in recent

years in the search for vanadium compounds suitable for therapeutic exhibition. Dr. Felix von Oefele and Dr. J. Bullinger, in view of the prospective importance of the metal, its alloys, and saline compounds, have now contributed an interesting review of our present knowledge of these compounds, with particular reflection upon those which have found therapeutic use. They speak of the occurrence of vanadium in nature, mention some of the uses of its alloys in technical medicine—such for example as the gold and platinum alloys of vanadium in dentistry—and then proceed to the description of a number of inorganic compounds of the metal which have been favorably mentioned as therapeutic medicaments; such, for example, as the several different modifications of vanadium pentoxide (V_2O_5); the different salts of orthovanadic acid (HVO_3), vanadium dichloride, respectively, which are characterized by great stability, and have on this account been exploited for a number of years past as specialties under specific trade names. Other compounds that are promising are the iodides and oxyiodides of vanadium, vanadium trisulphide, and vanadium selenide. Interesting compounds also, although no pharmacological experiments have yet been made with them, are the vanadium sulphyanadates, the vanadium oxysulphyanadates, and the vanadium sulphates.—*Pharm. Zentralh.*, LIII (1912), No. 1, 1-9.

Volatile Oils: Effect of Hydrogen Dioxide on Flavor and Taste.—The chemist of E. Sachsse & Co. reports the results of a series of experiments which, in view of the energetic oxidizing action of hydrogen dioxide, were undertaken to determine the effect of the latter on the volatile oils containing easily oxidizable constituents—such as aldehydes, alcohols, etc., which frequently compose the aromatic flavors of mouth washes containing H_2O_2 . The experiments were carried out by adding to a mixture of 40 gm. Alcohol (90 vol. percent), 30 gm. Water, and 25 gm. Hydrogen Dioxide, 0.05 gm. of the Volatile oil, and allowing this mixture to stand two months. The taste of the mixture was then compared with that of freshly-prepared mixture of identically the same material—no attempt being made to compare the odor by reason of the great dilution. The results were as follows:

Unchanged: Anethol, Anise Oil, Star-

anise Oil, Bornyl-Acetate, Eucalyptol, Eucalyptus glob. Oil, Geranium Oil, Pine-needle Oil, and Thymol.

Changed: Taste fainter than fresh—Carvacrol, Eugenol, Clove Oil, and Terpineol; decidedly changed—Geraniol (insipid, musty odor), Menthol, Menthyl Acetate (taste completely destroyed), Peppermint Oils of all sort, and Cinnamic Aldehyde (completely oxidized, without a trace of cinnamon odor or taste).—*Pharm. Ztg.*, LVII (1912), No. 4, 34.

Pharmaceutical Formulas

PROPOSED FOR A. PH. A. RECIPE BOOK.

(Continued from page 638.)

The present installment consists of formulas for Lotions, which the writer has been collecting for years. A great many of these preparations are frequently ordered on prescriptions, or called for over the counter, but the books at the disposal of the average pharmacist do not give formulas for same.

Strange to say, the pharmacopoeias and formularies of the Continent list none or very few lotions under the title "Lotion," but generally classify them as "Aqua" or "Liquor," or "Mixture," or "Solutio," or "Spiritus," etc., as can be seen in Formula No. 1 (*JOURNAL A. PH. A.*, p. 169) for Kummerfeld's Lotion, which has the title of *Aqua Cosmetica*.

Comments and criticisms are invited.

Respectfully submitted,

OTTO RAUBENHEIMER, Chairman.



Abbreviations can be found in May *JOURNAL*, p. 504.

Formulas No. 1 to 22, see February *JOURNAL*, p. 169 to 173.

Formulas No. 23 to 30, see April *JOURNAL*, p. 366 to 368.

Formulas No. 31 to 41, see May *JOURNAL*, p. 505 to 506.

Formulas No. 42 to 50, see June *JOURNAL*, p. 637 to 638.

LOTIONES.

Lotions.

The word "lotio" is derived from the Latin lavo=to wash.

Lotions are liquid preparations intended for application to the skin, or for use as washes for aural, nasal, ophthalmic, oral or urethral irrigation. They usually contain chemical substances in suspension or solution in aqueous vehicles. The addition of alcohol to aqueous lotions increases the rapidity of evaporation from the surface to which they are applied, their cooling effect being consequently increased. The use of glycerin in lotions retards the drying process and tends to produce a temporary protective film, which, if covered with a suitable dressing, remains moist for a considerable period.

Lotions are used without friction. They are applied with absorbent cotton, or upon linen or other absorbent fabric. Some lotions are allowed to dry on the skin and others are used so as to keep the area moist. In the latter case it is best to cover the moist cotton with oiled silk or some other waterproof material.

It should also be borne in mind that the ordinary lotions do not penetrate the epidermis.

<>

No. 51.

LOTIO ALBA.

White Lotion.

Lotio Sulphurata.

Zinc Sulphate..... 5 gm.

Sulphurated Potassa..... 5 gm.

Water, or Rose Water, a
sufficient quantity

To make..... 125 cc.

Dissolve each chemical in 60 cc. of Water, or Rose Water, which is preferred by some dermatologists and also by some patients on account of its odor; filter each solution and mix by slowly pouring the Potassa solution into the Zinc solution. Then add sufficient Water or Rose Water to make 125 cc.

It is absolutely necessary that the sulphurated potassa or liver of sulphur shall be fresh. When it has acquired a gray color and has lost its strong odor, then it is not fit for use.

This lotion should, of course, be dispensed with a "shake well" label.

The strength of White Lotion varies with

some dermatologists from 4 to 8 gm. of each chemical to 125 cc.

<>

No. 52.

LOTIO ALBA COMPOSITA.

Compound White Lotion.

Precipitated Sulphur..... 5 gm.

White Lotion, a sufficient
quantity

To make..... 125 cc.

Mix well by trituration.

Shake well before using.

By experience, the writer has found that it is best not to have the bottle completely filled with this lotion, as there will be a gas generated which will cause the lotion to splash or the bottle to burst. The writer is therefor in the habit of using a 6-ounce bottle for 4 ounces of the lotion, and gives this advice to his fellow-pharmacists.

As in No. 51, dermatologists vary the strength of this lotion from 4 to 8 gm. of precipitated sulphur, as well as zinc sulphate and sulphurated potassa in 125 cc.

<>

No. 53.

LOTIO RUBRA.

Red Lotion.

Red Wash.

Zinc Sulphate..... 5 gm.

Compound Tincture of Lavender 60 cc.

Water, a sufficient quantity

To make..... 1000 cc.

Dissolve the Zinc Sulphate in the Water and add the Compound Tincture of Lavender. Shake well before using.

<>

No. 54.

LOTIO ALKALINA.

Alkaline Lotion.

P. B. Cx.

Sodium Bicarbonate

Borax..... of each 10 gm.

Distilled Water, a sufficient
quantity

To make..... 1000 cc.

Dissolve.

B. P. Cx. 1911.

No. 55.

LOTIO BENZOINI.

Benzoin Lotion.

Lait Virginal.

B. P. Cx.

Tincture of Benzoin..... 2.5 cc.

Rose Water, a sufficient

quantity

To make..... 100 cc.

According to the experience of the writer, the nicest and smoothest "Milk" is obtained by placing the tincture of benzoin into a perfectly dry bottle and in a thin stream add the water.

<>

LOTIO CALAMINÆ.

Calamine Lotion.

The composition of "Calamine Lotion" differs very much in its ingredients as well as in strength.

The two formulas selected are from authorities, namely, one from Dr. L. Duncan Bulkley, the well-known New York dermatologist, and used in the N. Y. Skin and Cancer Hospital, etc., and the other from the British Pharmaceutical Codex, 1911.

Inasmuch as the calamine of commerce frequently contains coarse particles, it is absolutely necessary to elutriate the calamine and zinc oxide by triturating in a mortar with successive portions of the liquids, water, rose water and lime water, and then decanting from the coarse or siliceous particles in the bottom of the mortar.

A

Calamine 4 gm.

Zinc Oxide..... 8 gm.

Glycerin 12 gm.

Lime Water..... 15 cc.

Water or Rose Water, a

sufficient quantity

To make..... 125 cc.

Dr. L. Duncan Bulkley.

B

Prepared Calamine..... 10 gm.

Zinc Oxide..... 5 gm.

Glycerin 5 cc.

Rose Water, a sufficient

quantity

To make..... 100 cc.

B. P. Cx.

No. 57.

LOTIO CALAMINÆ COMPOSITA.

Compound Calamine Lotion.

Phenol, liquified..... 1 to 2 cc.

Calamine Lotion No. 56 A..... 100 cc.

Mix.

N. Y. Skin and Cancer Hospital.

<>

No. 58.

LOTIO A. B. C.

St. Thomas Hospital.

Lutio Acidi Carbolici et Boracis.

B. P. Cx.

Glycerite of Phenol, U. S. P..... 10 cc.

Glycerin of Borax, B. P. (No. 59) 10 cc.

Distilled Water, a sufficient

quantity

To make..... 100 cc.

Mix.

This lotion, diluted with five to ten times its volume of water, is an excellent antiseptic gargle and mouth wash.

<>

No. 59.

GLYCERINUM BORACIS.

Glycerin of Borax.

B. P.

Borax, in powder..... 10 gm.

Glycerin 60 cc.

Triturate until solution is effected.

<>

No. 60.

LOTIO EVAPORANS.

Evaporating Lotion.

A

Alcohol 20 cc.

Distilled Water, a sufficient

quantity

To make..... 100 cc.

B. P. Cx.

B

Ammonium Chloride..... 15 gm.

Alcohol 60 cc.

Water, a sufficient quantity

To make..... 360 cc.

Ph. Formulas.

No. 61.

LOTIO ZINCI OXIDI.

Zinc Oxide Lotion.

Zinc Oxide.....	20 gm.
Glycerin	10 gm.
Rose Water.....	70 gm.

 To make..... 100 gm.

By the addition of about 0.1 gm. of brown iron oxide, the so-called iron subcarbonate, a flesh tinted preparation will be obtained.

Hager Erg. Bd.

<>

No. 62.

LOTIO MAGNESIÆ ET ZINCI.

Magnesia and Zinc Lotion.

Magnesium Carbonate	
Zinc Oxide.....of each	4 gm.
Water, or Rose Water, a	
sufficient quantity	_____
To make.....	125 cc.

N. Y. Skin and Cancer Hospital.

<>

No. 63.

LOTIO REFRIGERANS.

Cooling Lotion.

(Sir A. Cooper.)

Potassium Nitrate	
Ammonium Chloride....of each	150 gm.
Water	500 cc.
Dissolve,	
Ph. Formulas,	

<>

No. 64.

LOTIO RESORCINOLI.

Resorcin Lotion.

A

Formula of Dr. George T. Elliot.

Resorcin	5 gm.
Diluted Alcohol.....	100 cc.
N. Y. Skin and Cancer Hospital,	

B

Andeer's Lotion.

Resorcin	10 gm.
Distilled Water.....	100 cc.
B. P. Cx.	

No. 65.

LOTIO PICIS CARBONIS.

Coal Tar Lotion.

Solution of Coal Tar.....	0.5 cc.
Distilled Water, a sufficient	
quantity	_____
To make.....	100 cc.

B. P. Cx.

NOTE: Solution of Coal Tar or Liquor Picis Carbonis, also known under the trade-marked name Liquor Carbonis Detergens, is proposed for admission into N. F. IV. (See also Proc. A. Ph. A., Vol. 57, p. 1931).

CAUTION: *Lotio Picis Carbonis* and *Emulsio Picis Carbonis*, the formula which follows, should not be confused!

<>

No. 66.

EMULSIO PICIS CARBONIS.

Emulsio Coaltar, Codex.

Emulsion de Coaltar.

Emulsion of Coal Tar.

Coaltar Saponiné Le Beuf (Lux.)

Solution of Coal Tar.....	1 part
Distilled Water.....	4 parts
Mix.	

This emulsion is diluted with about 10 parts of water for ordinary use.

<>

No. 67.

.. LOTIO PICIS CARBONIS.

Alkaline Coal Tar Lotion.

Solution of Coal Tar.....	0.5 cc.
Sodium Bicarbonate.....	1.25 cc.
Distilled Water, a sufficient	
quantity	_____
To make.....	100 cc.

Dissolve the Sodium Bicarbonate in the Water and add the Solution of Coal Tar.
B. P. Cx.

<>

No. 68.

LOTIO PRO ERYSIPELAS.

Erysipelas Lotion.

Chloral Hydrate.....	40 gm.
Spirit of Camphor, a sufficient	
quantity	_____
To make.....	125 cc.
N. Y. City Hospital.	

No. 69.

LOTIO OPII ALKALINA.

Alkaline Opium Lotion.

"Fuller's" Lotion.

Sodium Carbonate, crystals.....	24 gm.
Tincture of Opium.....	30 cc.
Glycerin	60 cc.
Water	270 cc.
N. Y. City Hospital—Hospital Formulary	

<>

No. 70.

LOTIO PRO ALOPECIA.

Dandruff Lotion.

Mercuric Bichloride.....	0.4 gm.
Resorcinol	
Boric Acid.....of each	20 gm.
Glycerin	15 cc.
Alcohol	125 cc.
Water, a sufficient quantity	_____
To make.....	250 cc.
To be used as wash for the scalp.	
Bellevue Dispensary.	

<>

No. 71.

LOTIO PRO MANIBUS.

Hand Lotion.

Citric Acid.....	0.6 gm.
Comp. Tincture of Lavender..	12 cc.
Alcohol	
Water.....of each..	30 cc.
Glycerin, a sufficient quantity	_____
To make.....	125 cc.
Kings County Hospital.	

<>

No. 72.

LOTIO BISMUTHI COMPOSITA.

Compound Bismuth Lotion.

(Startin.)

Bismuth Subnitrate	
Zinc Oxide.....of each	15 gm.
Spirit of Camphor	
Glycerin.....of each	15 cc.
Water, a sufficient quantity	_____
To make.....	600 cc.

Mix.

A soothing application for irritable skin in acne, etc.

Ph. Formulas.

No. 73.

LOTIO SULPHURIS.

Sulphur Lotion.

Precipitated Sulphur.....	6.85 gm.
Glycerin	3.10 cc.
Alcohol	12.5 cc.
Rose Water.....	40 cc.
Lime Water, a sufficient quantity	_____
To make.....	100 cc.

Triturate the Precipitated Sulphur with the Glycerin and some of the Rose Water to form to smooth paste, and then add the other liquids.

B. P. Cx.

<>

No. 74.

LOTIO PLUMBI ET SULPHURIS.

Lead and Sulphur Lotion.

"Sulphur Hair Restorer."

Lead Acetate, in powder.....	1.75 gm.
Precipitated Sulphur.....	3.50 gm.
Spirit of Rosemary.....	2.50 cc.
Glycerin	12.50 cc.
Rose Water, a sufficient quantity	_____
To make.....	100 cc.

Mix the Lead Acetate and Precipitated Sulphur intimately, triturate with the Glycerin, then add the Spirit of Rosemary, and sufficient Rose Water to make up the required volume.

B. P. Cx.

<>

No. 75.

LOTIO QUININÆ.

Quinine Lotion.

"Eau de Quinine."

Quinine Hydrochloride.....	0.11 gm.
Chloroform	0.52 cc.
Alcohol	20 cc.
Glycerin	1.56 cc.
Cologne Water	1.56 cc.
Spirit of Myrcia (U. S. P. 1890)	25 cc.
Tincture of Cudbear.....	3.12 cc.
Rose Water, a sufficient quantity	_____
To make.....	100 cc.

Dissolve the Quinine Hydrochloride in 40 cc. of Rose Water, add the other ingredients,

make up to the required volume with Rose Water and then filter through purified talc.

B. P. Cx.

<>

No. 76.

LOTIO RESORCINI COMPOSITA.

Spiritus Resorcini.

Spiritus Capillaris.

Resorcinol	2.5 gm.
Castor Oil.....	2.5 cc.
Cologne Water	20 cc.
Alcohol, a sufficient quantity	_____
To make.....	100 cc.
Dissolve.	
B. P. Cx.	

<>

No. 77.

LOTIO IRRITANS, GRANVILLE.

Granville's Counter-irritant, or
Antidynous Lotions.

A—Mild.

Stronger Ammonia Water.....	30 cc.
Spirit of Rosemary.....	24 cc.
Spirit of Camphor.....	8 cc.
Mix.	

B—Strong.

Stronger Ammonia Water.....	40 cc.
Spirit of Rosemary.....	16 cc.
Spirit of Camphor.....	8 cc.
Mix.	

These preparations will blister in periods, varied from 2 to 10 minutes, by saturating a piece of linen folder 5 or 6 times over a coin, and pressing it upon the part. Over more extended surfaces, a similar method is adopted by protecting the solution from evaporation.

Parrish.

(To be continued.)



Editorial Notes and Announcements

Committee on Publication:

JOS. W. ENGLAND, *Chairman*, Philadelphia, Pa.
GEO. M. BERINGER.....Camden, N. J
F. W. MEISSNER.....La Porte, Indiana
JOS. L. LEMBERGER.....Lebanon Pa.
FREDERICK J. WULLING...Minneapolis, Minn.
Ex-Officio: THE EDITOR, ASSOCIATE EDITORS
AND TREASURER.

JAMES H. BEAL, *Editor*.....Scio, O.
C. LEWIS DIEHL.....Louisville, Ky.
Associate Editor and Reporter on the
Progress of Pharmacy.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

In giving change of address, always give both the old and the new address.

RULES OF CENSORSHIP.

1. All contracts for advertising are accepted subject to revocation at the discretion of the Publication Committee.

2. No advertisement will be accepted for any article or service, the sale or furnishing of which is illegal in the state of publication or in any state in which the JOURNAL circulates.

3. Advertisements will not be accepted for articles belonging to the class of preparations commonly known as patent medicines, nor for any medicinal preparation advertised directly to the laity, or which is advertised in such a manner as to encourage self medication.

4. Copy which is vulgarly or extravagantly worded, or which makes extravagant claims of therapeutic virtues will not be accepted.

5. No advertisement will be accepted which by intent or inference would result in deceiving, defrauding or misleading the reader.

REPRINTS.

The Stoneman Press Co., Columbus, O., will furnish reprints of papers appearing in the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION at the prices named below, when the order is received before the type has been distributed:

- 50 copies, 4 pages, no cover, \$2.25, with cover, \$4.00.
- 100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.
- 200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.
- 50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.
- 100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.
- 200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.
- 50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.
- 100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.
- 200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co.



BOSTON COMPLETES THE RECORD.

The familiar "Record Book," the large leather-bound volume in which attendants at the annual convention record their names, was opened at Boston, September 13, 1859. The last page was filled at Boston, at the 59th meeting, in 1911. Evidently Boston pharmacists do not begin anything they can't finish.

The new record book has just been completed by the bindery, and will be used for the first time at Denver, on August 19th.



CONTRIBUTION TO THE HALLBERG FUND.

Ferd Eliel Wertheim, of Chicago, Ill., a nephew of the late Leo Eliel, has contributed \$10.00 to the Hallberg Memorial in memory of Mr. Eliel.

This reminds us that Leo Eliel was one who always stood straight up in favor of professional pharmacy, and that he labored in behalf of the American Pharmaceutical Association for many years.

A fund dedicated to his memory, the income to be devoted to some purpose which

Mr. Eliel would have approved, would be a very appropriate means of perpetuating his memory in the Association for which he had such high regard. Should Indiana pharmacists take steps to originate such a fund, they will find many in other states ready to contribute to it.



PRIZE NOMINATIONS TO MEMBERSHIP.

The professors in a number of colleges of pharmacy have adopted the laudable practice of giving prizes consisting of a nomination to membership in the A. Ph. A., and the first year's dues of \$5.00, for excellence in scholarship.

Among prizes of this kind recently granted are the following:

JOHN ARTHUR RULEY,
301 Livingston St., Brooklyn, New York.,
awarded by Prof. Charles H. LaWall, of the Philadelphia College of Pharmacy.

RUSSELL C. WILCOX,
Gary, Indiana.

RUFUS C. ARBAUGH,
Jasper, Arkansas.

M. LEE ALBERTS,
Valparaiso, Indiana.

The last three prizes were presented by Professors G. D. Timmons and A. M. Linton, of the Valparaiso School of Pharmacy.

The Editor would be pleased to receive information concerning similar prizes offered by others.



OUT-OF-DOOR MEETINGS FOR A. PH. A. BRANCHES.

Two A. Ph. A. Branches seem to have discovered almost simultaneously the benefit of out-of-doors-meetings.

The St. Louis Branch held a special out-door meeting on June 7, at the Missouri Botanical Garden, in St. Louis; and the City of Washington Branch held a similar meeting at the Arlington Experimental Farm, U. S. Department of Agriculture, on May 25, and under the direction of Dr. Rodney H. True, who has charge of the Drug Division of the Experimental Farm, studied the efforts of the Government in drug cultivation.

Both meetings were well attended, and so far as we can judge from the reports, were highly enjoyed by the members.

The Branches at Philadelphia and New York City are likewise favorably situated for

such excursions, and we hope to hear that they have held such meetings before the summer has passed. The Branches of some other cities may be less favorably situated as regards botanical gardens, but there are few which are not within reach of "woody" places suitable for picnicking and botanical study.

<>

TENNESSEE EDUCATIONAL LOAN FUND.

The Tennessee Pharmaceutical Association last year inaugurated something new in state association work by laying the foundation for an "Educational Loan Fund."

The fund is to be made up by an annual contribution of the Tennessee Association and donations from individuals. The executive officers of the association are to act as Trustees, and when a sufficient amount has been raised loans will be made from it to worthy young men, and we presume also to worthy young women, to enable them to secure a college education in pharmacy.

The object is to be commended, and we trust that the example of the T. P. A. will be imitated by other pharmaceutical associations.

The history of educational loan funds conducted by societies other than pharmaceutical indicates that young men who are ambitious enough and far-sighted enough to pursue a college education to completion almost invariably repay such loans, and as a consequence such a fund, if properly administered, should increase with age.

<>

THE A. M. A. POST-GRADUATE COURSE.

One of the many good things championed by the American Medical Association is a four years' post-graduate course of study for physicians, conducted through the medium of County Medical Societies.

The curriculum is set forth in four pamphlets of about 50 to 90 pages each, giving a program of subjects for weekly and monthly meetings, suggestions for study, and lists of reference books.

To what extent physicians avail themselves of this work the writer is unable to say, but it is impossible to read the curriculum of the post-graduate course without being convinced of the fact that the A. M. A. has inaugurated a work which possesses great possibilities for

the improvement of the mass of medical practitioners.

That physicians generally seem to accept this work with serious consideration is an indication of how much more alert they are to the means of general improvement than pharmacists. One who is familiar with the difficulty of getting a collection of local pharmacists together for any purpose will appreciate this fact. Indeed it has been said more than once that the profession of medicine as a whole owes its superiority in rank to pharmacy, and the greater dignity in which it is held, to the faithfulness of physicians to their State and County Medical Societies.

The success of the A. Ph. A. Branches which have been organized long enough to show local druggists what can be done for their mutual improvement by a monthly coming together, and of a few independent pharmaceutical associations in several of the cities indicates the possibilities for a like program for pharmacists.

Here is an opportunity where each individual pharmacist can do something towards professional advancement, and every town and district where there is a sufficient number of members to do so should organize a branch and when organized should support it, either by attendance of themselves or by securing the attendance of their assistants. As a rule it is easier to find men who are able and willing to furnish a program than to obtain an audience to listen to it. Besides, many druggists who regard their own experience as humdrum and trivial, after attending a few such meetings will discover that they also possess information that would be of value to others.

The summer season is the time to plan programs and to get the members together for the winter campaign. Where no branch is in existence it can be organized and initiated by an out-of-doors meeting.

The Bulletin Board

ANNOUNCEMENT TO THE SCIENTIFIC SECTION.

All members of the American Pharmaceutical Association interested in the Scientific Section are respectfully requested to advise

any one of the officers of the Section at an early opportunity of the subject or subjects of any paper or papers that they contemplate presenting before the Section at the Annual Meeting of the Association August 19-24, at Denver, Col. Many of the active members of the Section are busy with Pharmacopœia work, and should be able to present interesting resumes of results determined to date. Others have undoubtedly carried out special lines of research, the results of which would be of much interest to many members in attendance at the meeting. Each and every member of the Association in a position to present papers before the Section is earnestly requested to prepare such paper or papers, and advise any member of the Committee of the title or titles at an early date.

COMMITTEE ON SCIENTIFIC PAPERS.

W. O. RICHTMANN, Chairman,
Satsuma Heights, Fla.

<>

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

Indications at this early date all point to a most interesting convention at our forthcoming meeting in Denver. Much work has already been done with this end in view; much more still remains to be done if we are to excel the achievements of former years. While the aggregate of such work seems large, if each loyal member will but play his part—the contribution of a single article, essay, or paper on some subject pertaining to our profession—the final result will be most gratifying to the committee in charge, to the members in attendance, and to the larger audience of the American Pharmaceutical Association throughout the entire land.

The American Pharmaceutical Association has within its ranks hundreds of capable pharmacists who ought to undertake and assist in this unselfish work. The contributors to this Section in the past have always been eagerly sought for by the pharmaceutical press because of their great value to the practical every-day pharmacists. Contributors therefore derive the benefit of this publicity, while indirectly it adds to their personal prestige as pharmacists worthy of their calling.

It is earnestly hoped that we may receive many responses from new members this year, and the committee stands ready at all times to offer advice or suggestions for intended

articles in this particular field. Let the response be quite general this year. Let each one do his part, however small, and let us all get better acquainted with the work when we convene at Denver in August.

Fraternally yours,

P. HENRY UTECH, Chairman.

J. LEON LASCOFF, Secretary.

Meadville, Pa., June 19, 1912.

<>

SECTION ON HISTORICAL PHARMACY.

Bulletin No. 2.

The Committee on Historical Pharmacy is not in position to offer boxes of Havanna cigars as prizes, like the Committee on Commercial Interests (vide JOURNAL A. PH. A., May, p. 509), but is nevertheless happy to report that a number of papers have already been contributed and many more have been promised.

The paper, "Some Pharmacists in New York City Three-Fourths of a Century Ago" (JOURNAL A. PH. A., April, p. 359), by Ewen McIntyre, the nestor of New York City pharmacists, should also stimulate others to record the history of some pharmacies in their respective cities or states. And the paper by Ernest C. Marshall, "The Early History of the Massachusetts College of Pharmacy" (J. A. Ph. A., January, p. 53), should tempt other colleges also to write up their history and have same published in the JOURNAL and preserved in the archives of the Association.

The committee beg to announce that Prof. Edward Kremers' innovation at the Boston convention will be followed by an illustrated historical lecture at the Friday evening meeting of the Section at Denver.

Besides papers, we also solicit letters, photos, books, etc., on historical subjects.

Sincerely yours,

OTTO RAUBENHEIMER, Chairman.

EDWARD KREMERS, Historian.

CASWELL A. MAYO, Secretary.

Brooklyn, N. Y., June 15, 1912.

<>

MR. BODEMANN'S VIEWS ON PARCELS POST AND OTHER THINGS.

Dear Mr. Editor—I understand that on the door of your sanctum in the twelfth story of a Columbus sky-scraper you have a card: "Contributions are solicited, and if they don't meet our approval the contributor will not

be fired out of the window." This gives me courage to whisper a dissent from your views, or from some of your views, on "Parcels-Post."

In the first place, I am not a prophet, but I am not blind, and I do firmly believe that Parcels-Post will come! Why? Because all other so-called civilized, and some of the not yet civilized ones have parcels-post. Your argument that it will crush out the small merchant by the mail-order houses is a lame one, very lame, because it proves just the contrary.

You describe the fearful inroads of the mail-order houses into the business of the small merchant in the country. My dear Editor, I do not take a back seat to your love and championship of the small community and its merchants, but if whole communities have been wiped off the map by the mail-order houses without Parcels-Post as a factor, then parcels-post with its rate so adjusted that our mutual friend the country merchant is protected against the mail-order houses of Philadelphia and Chicago—who could not share in the low rates of the so-called Zone Schedule of the Parcels-Post—and, if it be true, that Parcels-Post will benefit the largest number of our citizens, and injure the small merchant, then, if your honor please, would not that be a knock-down argument *for* rather than against Parcels-Post?

Laws that benefit the few against the many are class legislation and have no place on the statute books of a democratic government.

I understand you are not a very sound sleeper, and I sincerely hope that my incendiary letter does not conjure up nightmare before your nocturnal vision. I would rather be sent to the correction house for disorderly digestion than express views which I don't hold.

Parcels-Post will come—will follow in the wake of civilization. All the romances of Fenimore Cooper could not prevent the "Last of the Mohicans" from being the last one, and incidentally with the last Indian in the wilderness gone, we have more bad Indians than ever.

The double-decker—the Pharisee and time-server, the Tartuffe, the Patriot for Revenue Only of the new era is as treacherous a Cherokee as the genuine redskin ever was.

But that belongs to another Parcel of a job lot of canned Essays on Modern Diseases.

THE CONTRACT PLAN.

Pardon my frankness, but if you had cut out all but the opening paragraph of your editorial on the Contract Plan it would have been a corker.

Of course, you would and could have given your readers a knock-me-down argument on organization, and on honesty.

Speaking shorthand, any plan,—the best not excepted—without organization and without honesty is not worth a continental, and with honesty you need no plan; and any plan that cannot be carried out is moonshine, and you cannot weave leather out of moonshine.

I have discussed these several plans with jobbers and manufacturers and,—while they talk guardedly and wisely when talking for publication—when you get down to brass tacks there is none of the plans that can be carried out, even if the good will is there, unless you have honest, honorable men strongly organized.

Any Pharisee and monte card expert can shoot the best plan so full of holes that a scar-battered flag of the Iron Brigade looks like sound material beside it.

WANTED, A NEW PROPAGANDA.

There was a time in the history of our country when a lifelong Democrat came to the assistance of a Republican President with his matchless eloquence, and his words were like a flash of lightning from North to South, from East to West. The speaker was Douglass, the President was A. Lincoln, opponents in the political campaign of 1860, but not in the 20th century billingsgate style.

Said Douglass: "No longer are we either Republicans or Democrats, but either Patriots or Traitors." That, Mr. Editor, applies to Pharmacy at the present hour! Now that the doctrine of propaganda is preached from housetops and from convention platforms, the pharameists of America must choose between patriots or traitors.

The man who preaches Propaganda and practices Quackery is a traitor to the cause of pharmacy "A house divided against itself cannot stand." You can not be fish in front and roast beef in the rear. If you want confidence from public and physician you must come into court with clean hands. At the risk of being adjudged a heretic I firmly believe and am not afraid to say that pharmacy needs a crusade for honesty, honor and

self-respect more than any other kind of propaganda, and on this platform, your crusade for better things in pharmacy must stand or fall!

If you succeed, as I sincerely hope and trust, you will be a new "Savcur de Societe" as they termed it in the time of Napoleon III; if you fail, you will have sacrificed your ease and comfort for the sake of a noble cause and will be crucified on the cross of quackery, dishonor and charlatany.

The A. Ph. A., for over half a century the valiant standard bearer for clean, decent, honest pharmacy, should be the rallying ground for American Pharmacists, and if, like in the days of 1861, we could sing: "We are coming, father Beal, 50,000 strong," you would have an army that would sway everything before it!

There never was a breath of suspicion of quackery raised against this noble association, for which you wage warfare, and whether there is immediate return for the \$5.00 dues in sight or not, it should be the duty of every self-respecting pharmacist loving his cause to join this army and contribute his mite, no matter how small and humble, to the victory of the future. If the cause of the A. Ph. A. does not conquer, pharmacy will be one of the lost arts! With the warriors of our militant N. A. R. D. fighting for a decent living, decent hours, decent rest, and the A. Ph. A. for decent pharmacy, I behold the dawn of a new morn.

W. BODEMANN.



U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

RECENT CHANGES IN PHARMACISTS' ASSIGNMENTS.

Brown, F. L., Pharmacist. Relieved from duty at the Marine Hospital, Chelsea, Mass., and directed to report to the medical officer in command at the Marine Hospital, Vineyard Haven, Mass., for duty and assignment to quarters. April 29, 1912.

Thurston, E. J., Pharmacist. Upon the arrival of Pharmacist O. C. Cannon, relieved from duty at the Marine Hospital, Chicago, Ill., and directed to report to the medical officer in command of the Marine Hospital, Evansville, Ind., for duty and assignment to quarters. April 29, 1912.

Troxler, R. F., Pharmacist. Upon the arrival of Pharmacist E. J. Thurston, relieved from duty at the Marine Hospital, Evansville, Ind., and directed to report to the medi-

cal officer in command of the Marine Hospital, San Francisco, Cal., for duty and assignment to quarters. April 29, 1912.

Cannon, C. C., Pharmacist. Upon the arrival of Pharmacist F. L. Brown, relieved from duty at the Marine Hospital, Vineyard Haven, Mass., and directed to report to the medical officer in command of the Marine Hospital, Chicago, Ill., for duty and assignment to quarters. April 29, 1912.

Granted 20 days' leave of absence from May 10, 1912.

Bierman, C. H., Pharmacist. Upon arrival of Pharmacist J. L. Osborn, relieved from duty at Baltimore, Md., and directed to report to the medical officer in command, Marine Hospital, Portland, Me., for duty and assignment to quarters. May 17, 1912.

Osborn, J. L., Pharmacist. Relieved from duty at Fort Stanton, N. M., and directed to report to the medical officer in command, Marine Hospital, Baltimore, Md., for duty and assignment to quarters. May 17, 1912.

Granted five days' leave of absence enroute to station. May 17, 1912.

Pharmacist M. B. Eldridge resigned, effective May 27, 1912. May 21, 1912.

Irwin, C. H., Pharmacist. Upon arrival of Pharmacist Troxler, relieved from duty at San Francisco quarantine station and directed to report to the medical officer in command, Fort Stanton Sanatorium for duty and assignment to quarters. May 22, 1912.

Troxler, R. F., Pharmacist. Orders dated April 29, 1912, directing him to report to Marine Hospital, San Francisco, Cal., amended so as to direct him to report to the medical officer in command of the San Francisco Quarantine Station for duty and assignment to quarters. May 22, 1912.

Weitzenant, W. W., Pharmacist. Granted three months' leave of absence from June 1, 1912. May 27, 1912.

Pharmacist Julius E. Beck resigned, effective June 7, 1912.

State Associations

THE MISSOURI PHARMACEUTICAL ASSOCIATION.

The Mo. Ph. A. held its thirty-fourth annual meeting at Pertle Springs (Warrensburg), June 11-14. It was the eleventh meet-

ing place and the convention voted to meet again at the same place, the second Tuesday in June, 1913.

The register shows 70 members, 62 salesmen, 53 ladies and 3 children, a total of 188. Of those who attended the meeting twenty-five years ago, the following were present this year: J. M. Love, F. R. Dimmitt, Charles L. Wright, William Mittelbach, H. M. Whelpley and George L. Parsons. Of those who took part in the organization meeting in 1879, C. L. Clifford and F. R. Dimmitt were present in 1912. H. M. Whelpley completed his twentieth successive year as Secretary.

Ralph L. Wardin, Nevada, was unanimously nominated for reappointment as a member of the Board of Pharmacy. His term expires July 1.

Treasurer Mittelbach reported a cash balance of \$283.53. Forty-four new members were elected. Seven deaths occurred during the past year.

The A. Ph. A. and the N. A. R. D. were represented by delegates and communications.

A resolution was adopted condemning the action of the Missouri Insurance Commissioner in placing a ban on Druggists' Liability Insurance.

Secretary Charles E. Zinn and President William Mittelbach reported for the Board of Pharmacy which has adopted practical examinations and now requires one year high-school work or its equivalent before taking an examination.

Ed. C. Fritsche, of Leavenworth, represented the Kansas Ph. A. in an interesting address.

Several of the papers were accompanied by demonstrations and illustrations and much time was devoted to practical discussions.

A committee was appointed on the Procter Monument Fund.

A report was made on the Beal Fund, the interest of which is used in paying the dues of the candidate for registration making the highest general average.

It was decided to discontinue giving medals for papers. Prizes were discarded several years ago.

Although Missouri was the first state to urge the attendance of women and children it does not have an auxiliary. Mrs. H. M. Whelpley directed this feature of the entertainment.

MO. PH. A. OFFICERS FOR 1911-12.

President, H. O. A. Huegel, St. Louis.

Honorary President, F. R. Dimmitt, Kansas City.

First Vice President, Jesse E. Koppenbrink, Higginsville.

Second Vice President, Ed. G. Schroers, St. Joseph.

Third Vice President, Dr. E. L. Rhodes, Lincoln.

Treasurer, William Mittelbach, Boonville.

Permanent Secretary, Dr. H. M. Whelpley, St. Louis.

Local Secretary, F. W. Robinson, Warrensburg.

COUNCIL.

I. Ben Miller, Cape Girardeau, Chairman.

Leo Suppan, St. Louis, Vice Chairman.

D. V. Whitney, Kansas City, Secretary.

Paul L. Hess, Kansas City, and J. A. Trimble, Butler.

THE PAPERS.

1. Castor Oil and Castor Bottle. By J. F. Llewellyn, Mexico, Mo.

2. Crushed Fruits. The Process of Manufacture and Sterilization Against Bacteria. Yeast and Molds. By O. J. Cloughly, St. Louis.

3. Is an Itinerant Association Successful? By Francis Hemm, St. Louis.

4. A Formula for Deodorized Tincture from Deodorized Opium. By Wm. K. Ihardt, St. Louis.

5. A Poisoning Expert of the Seventeenth Century. By Leo Suppan, St. Louis.

6. The Missouri Pharmacy Law Compared with the Beal Model Law. By William Mittelbach, Boonville, Mo.

7. The Missouri Pharmaceutical Association 1887 Meeting. By Dr. H. M. Whelpley, St. Louis.

8. American Medicine. By J. F. Llewellyn, Mexico, Mo.

9. Analysis of the Missouri Pharmacy Law. By William Mittelbach, Boonville, Mo.

10. The Issues of the Day. By H. O. A. Huegel, St. Louis.

11. The Sale of Poisons. By William Mittelbach, Boonville, Mo.

12. Practical Suggestions. By O. J. Cloughly, St. Louis.

13. The Indian Doctor. By Dr. H. M. Whelpley, St. Louis.

The Missouri Pharmaceutical Travelers' Association held its twenty-first annual meet-

ing and elected the following officers: Bob Grigor, President; Ed. Himburg, First Vice President; O. H. Oestereich, Second Vice President; V. H. Tisdale, Third Vice President; W. R. Adelsperger, Secretary; D. R. Dunavan, Assistant Secretary; Dan Liddy, Treasurer; Andrew E. Holmes, Publicity Representative; C. L. Chittenden, Sergeant-at-Arms.

Council: C. M. Coon (Chairman), Kansas City; Rex Hood, Kansas City; Charles Wagner, St. Louis; Otto P. Meyer, St. Louis. C. L. Chittenden, St. Louis, Charles Wagner, St. Louis, and Ed. Hunter, Kansas City, were appointed as a welcome committee, to cooperate with a similar committee from the Mo. Ph. A. The travelers raise the money for the entertainment, secure the prizes and have charge of the social features at the annual meeting. Wm. H. Lamont is Chairman of the committee.

H. M. WHELPLEY, Secretary.

<>

ILLINOIS PHARMACEUTICAL ASSOCIATION.

The most striking feature of the recent meeting of the Illinois Pharmaceutical Association at Springfield was the report of the Legislative Committee on the overwhelming vote in favor of the graduation prerequisite. The committee had sent a circular letter to all of the registered pharmacists of the state inviting them to vote upon this subject. Twelve hundred and twelve votes were received—965 in favor of the graduation requirement and 247 opposed, thus putting a quietus on the statement which has been made frequently, that the druggists of Illinois are opposed to the graduation prerequisite.

The Association also adopted resolutions on the death of Mr. Henry Biroth, who was President of the I. Ph. A. during 1881-82, local Secretary at the World's Fair meeting in 1893, and Honorary President of the A. Ph. A., 1912-1913.

The Convention was one of the most successful ever held by the Association. The attendance was large, the sessions harmonious and the entertainments delightful. Much credit for the success of the entertainments and the comfort of the visitors is due the Sangamon County Retail Druggist's Association, who with the Illinois Pharmaceutical Traveler's Association had charge of these features.

The reports of the financial officers showed that the Association is in prosperous condition. Fifty new members were elected at the meeting.

The officers elected are: President, J. H. Wells, Chicago; First Vice President, Ralph E. Dorland, Springfield; Second Vice President, J. A. Reiss, Rock Island; Third Vice President, Paul Grace, West Salem; Secretary, W. B. Day, Chicago; Treasurer, Chris Garver, Bloomington.

The next meeting will be held at Quincy.

W. B. DAY, Secretary.

<>

Matters of General Interest

RULES AND REGULATIONS OF THE FEDERATION INTERNATIONALE PHARMACEUTIQUE.

NAME AND WHERE ESTABLISHED.

Article 1. On the 5th September, 1910, the Tenth International Pharmaceutical Congress, held at Brussels, resolved at the proposal of "de Nederlandsche Maatschappij ter bevordering der Pharmacie" to the establishment of an International Union, formed out of the National Pharmaceutical Societies, Associations and Companies, and to be known as the "Federation Internationale Pharmaceutique."

The Federation will have its registered Office at the Hague.

OBJECT.

Article 2. The object of the Federation is the promotion of Pharmacy, either as profession or as applied science, along international channels.

Article 3. The Federation will endeavor to attain this object by:

1. Collecting data with regard to the pharmaceutical profession in all countries and by supplying information on scientific and practical pharmacy.
2. By promoting uniformity in the qualifications required for education and tuition.
3. By studying the laws regulating the pharmaceutical profession.
4. By giving advice and supplying data with regard to the laws relating to pharmacy.

5. By organizing international pharmaceutical congresses.

6. By filing the papers of these international congresses, arranging and working out the subjects treated there and studying fresh subjects for treatment.

7. By making arrangements for taking part in congresses of interest to pharmacy and by collaboration with other international societies.

8. By protecting the rights of the pharmaceutical profession.

9. By opposing the sale of secret remedies and the practice of pharmacy and sale of medicines by unqualified persons.

10. By promoting uniformity in the form of medicines and methods of investigation.

12. By promoting international ententes, regulating the drug-trade.

13. By exercising its influence in the event of an international regulation of patents, brands and trade-marks.

14. By the publication of papers on subjects of interest to international pharmaceutics.

15. By doing all other things as may be considered conducive to the attainment of the object of the Federation.

MEMBERS.

Article 4. The members of the Federation are divided into honorary members, ordinary members, corresponding members and associates.

Article 5. Honorary members are those who have done special service for and deserve well of the Federation. They are nominated by the Central Committee.

Article 6. Ordinary members are:

1. The Governments subsidizing the Federation. They are represented in the Central Committee by a voting member.

2. Those National Pharmaceutical Societies which are incorporated and may be regarded as representing the pharmaceutical profession in their country in the widest sense. They are represented in the Central Committee by voting delegates. The Central Committee decides as to the admission of the National Societies.

3. The President and General Secretary of the last held International Congress and those of the next.

Article 7. Corresponding members are

nominated by the Central Committee in countries or colonies having no pharmaceutical association, which is a member of the Federation.

Article 8. Associates are those persons and societies who wish to promote the prosperity of the "Federation Internationale Pharmaceutique" and are nominated by the Central Committee.

They will receive the papers published by the Federation and may be present at the meetings but have no vote.

Article 9. All persons named in Articles 5, 6 and 7 form the Central Committee. Societies having less than 500 members may have one member as representative in the Central Committee, societies with from 500-1000 members two, those with from 1000-1500 three, 1500-2500 four, 2500-5000 six, and those with more than 5000 members eight.

A member of the Central Committee may transfer his right to vote to another delegate of his society.

ORGANIZATION.

Article 10. The Central Committee represents the Federation both at law and otherwise and appoints a Board consisting of: 1 President, 4 Vice Presidents, 1 General Secretary and 2 Assistant Secretaries.

This Board is entrusted with the carrying into effect of all resolutions of the Federation.

The Board has its office at the Hague and meets there. A Board meeting, however, may also be called elsewhere if deemed expedient by the President. The General Secretary must reside at the Hague, he is appointed for a period of six years and is re-eligible. The other members of the Board are elected by and from among the members of the Central Committee for a period of three years and are re-eligible.

The Board regulates its business by its own domestic rules.

Article 11. The President or one of the Vice Presidents presides the meetings and with the Secretary signs all outgoing documents. The President or one of the Vice Presidents must reside in Holland.

The General Secretary is entrusted with the files, the convening of meetings and the carrying into effect of the resolutions of the Board. In consultation with the Board he appoints a staff.

He manages all moneys belonging to the

Federation and, annually, has to give an account of his management to the Board.

The President enters into a written agreement with the General Secretary for the time he will be in office. This agreement must be valid according to Dutch law. The Board fixes the amount of his guarantee for the moneys under him.

REVENUE.

Article 12. The income of the Federation consists of:

1. Government sub-sides.
2. Fixed annual contributions of the national societies, members of the Federation. This contribution is fixed at fr 100.— for each delegate, the society has a right to appoint in the Central Committee in connection with the number of its members. This contribution may be notified by the Central Committee for each subsequent year.

The fixed contributions sub 2 are to be sent, by the members of the Central Committee representing the national societies before the 1st May of each year, by registered letter or P. O. O. to the General Secretary at the Hague.

3. Annual contributions of associates. This contribution is fixed at fr 20.— p. a.

4. Donations, voluntary contributions or bequests by societies or individuals.

SPECIAL COMMISSIONS.

Article 13. The Central Committee may appoint special commissions for special purposes and also invite persons, not being members of the Central Committee, to take part in the work and discussions of such commissions.

These special commissions will draw up a report to be submitted to the Board, while all papers are to be sent to the Secretary.

Article 14. The Central Committee may grant a fixed amount for the labors of these special commissions.

MEETINGS.

Article 15. The meetings are divided into:

1. Board meetings.
2. General meetings.

Board meetings are called by the President or when the request of three members of the Board.

The general meetings are called by the President or if deemed expedient by the Cen-

tral Committee at a place to be fixed by the Board. Proposals to this effect should be submitted to the Board by registered letter. If necessary the Central Committee takes a decision in this regard by votes in writing.

All members of the Central Committee may attend these general meetings.

Resolutions at these meetings are carried by a majority of two-thirds of the votes polled.

Article 16. Instead of in a meeting, voting and treatment of subjects may also take place by registered letter.

Article 17. The Board of the Federation may lend its assistance for holding an International Congress after consulting the pharmaceutical societies in the country where the Congress is to be held.

Article 18. The organizing of these international congresses is entrusted to a National Committee; Presidents and General Secretary are appointed in consultation with the Board of the Federation.

The International Congresses are regulated by the Organizing National Committee in consultation with the Board of the Federation.

GENERAL STIPULATIONS.

Article 19. The Federation will not encroach upon the sphere of activity of the National Societies.

Article 20. Any proposal to alter these rules will have to be put forward by the Board or by the Central Committee.

Article 21. Any proposal to dissolve the Federation will have to come from the Board or from a majority of the members of the Central Committee. It can only be put to vote at a meeting convened at least three months previously by registered letter and at which at least one-half of the members of the Central Committee exercises the right to vote.

Voting members, who are prevented from attending this meeting may register their vote by registered letter. If one-half of the members is not either present or represented the proposal will be voted upon in writing. In the latter case the proposal must be agreed to with at least two-thirds of the votes registered.

Article 22. Societies, desiring to discontinue their membership, are to give at least one year's notice thereof.

Article 23. These rules and regulations will be construed according to the French text and the Dutch law.

Article 24. In case the Federation is dissolved all its possessions become the property of the State of the Netherlands.

THE INTERNATIONAL OPIUM CONFERENCE.

International action to control the traffic in opium, morphine, cocaine, and other drugs with like properties seems likely to result from the Opium Conference which has recently been sitting at The Hague. The initiative and influence of our own representatives have been particularly directed towards practical legislation to deal with the traffic in morphine and cocaine, and their efforts have met with very general sympathy and support. It is understood that the representatives of the twelve powers concerned are agreed that these drugs should not be allowed to be exported except without a permit, but the actual terms of the convention are not yet known. The object aimed at is, of course, to limit, as far as possible, the production of cocaine and morphine by the demand for *bona-fide* medicinal purposes. That a large proportion of the output of these alkaloids is put to illicit uses cannot be disputed, and any measure of legislation which appreciably curtails irregular traffic in these drugs must necessarily lead to a diminished production, and possibly to some alteration in price. The possible effect on the market for cocaine and morphine and their salts of the operation of such regulations as the conference may initiate must not be overlooked, but it will be better to await until the terms of such regulations are available before speculating as to what those effects may be.—*Pharmaceutical Journal* (London).

EXTRACTS FROM OLDFIELD BILL (H. B. 23417) TO AMEND THE PATENT LAW.

Section 17. * * * * *

If at any time during the term of the patent, except the first four years, the patented invention shall not be manufactured, or the patented process carried on within the United States, its Territories, or possessions afore-

said to an adequate extent by the owner thereof, or by those authorized by him, then *any person demanding it shall be entitled to a license from the owner of the patent to manufacture the invention or to carry on the patented process, unless the owner shall show sufficient cause for such inaction.*

Upon the refusal of such a license by the owner of the patent, the person seeking such license may apply to the district court, in the district wherein the owner has a residence or an established place of business, to compel the granting of such license. The court shall thereupon hear the person applying for said license and the owner of the patent, and, if the court is satisfied that the reasonable requirements of the public in reference to the invention have not been satisfied by reason of the neglect or the refusal of the patentee, his legal representatives, or those authorized by him to make, use, or vend the invention, or to grant licenses to others on reasonable terms to make, use, or vend the same, *said court shall issue an order requiring the owner of the patent to grant a license to the person applying therefor in such form and upon such terms as to the duration of the license, the amount of royalties, security for payment, the period within which the patented invention shall be manufactured or the patented process carried on; and otherwise as the court, having regard to the nature of the invention and the circumstances of the case, deems just.*

From the order of the district court granting or refusing to grant such a license, appeal may be taken (by the party aggrieved) to the circuit court of appeals in the same manner and form as in other cases arising under the patent laws: *Provided*, That the citizens of any country which by treaty, convention, or law provides that the manufacture of the patented invention or the carrying on of the patented process in the United States shall be equivalent to the manufacture or the carrying on of the process in such country will be considered to have sufficiently complied with the requirements of this section if the invention is manufactured in said country within the period heretofore mentioned.

If at any time during the life of a patent a material and substantial *improvement* shall be patented, the manufacture of which would be an infringement of the original patent, the owner of the improvement patent may apply to the district court in the district wherein the owner of the original patent has a resi-

dence or an established place of business to *compel the granting of such a license* as will enable the improvement to be manufactured.

The court shall thereupon hear the respective parties, and if the court is satisfied that the improvement is of such a material and substantial nature that the reasonable requirements of the public demand that it should be manufactured and sold, the court shall issue an order requiring the owner of the original patent to grant a license to the owner of the improvement patent in such form and upon such terms as to the duration of the license, the amount of royalties, security for payment, the period within which the patented invention shall be manufactured or the patented process carried on, and otherwise, as the court, having regard to the nature of the original invention and improvement and the circumstances of the case, deems just.

From the order of the district court granting or refusing such a license appeal may be taken by the party aggrieved to the circuit court of appeals in the same manner and form as in other cases arising under the patent laws.

Section 32 * * * * *

Any person who purchases of the owner of a patent, or of any interest therein, any machine, manufacture, or composition of matter covered by such patent, shall have the *unrestricted* right to use, vend, or lease to others to be used the specific thing so purchased without liability to action for infringement; and it shall not be lawful to insert a condition in any contract relating to the sale, lease, or license to use any article or process protected by a patent or patents, the effect of which will be to prohibit or restrict the purchaser, lessee, or licensee from using any article or class of articles, whether patented or not, or any patented process supplied or owned by any person other than the seller, lessor, or licensor or his nominees; and it shall not be lawful to insert a condition in any contract relating to the sale, lease, or license to use any article or process protected by a patent or patents, the effect of which will be to require the purchaser, lessee, or licensee to acquire from the seller, lessor, or licensor, or his nominees, any article or class of articles not protected by the patent, and any such condition shall be null and void as being in restraint of trade and contrary to public policy.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



HENRY BIROTH.

Henry Biroth was born in Posen, on September 19, 1839, and came to the U. S. in 1857. He was apprenticed to Dr. Frederick Mahla, one of the leading apothecaries and chemists of the Northwest in early days; he enlisted in the army of the Civil War; started a store for himself on Archer Road and Halsted, and conducted the old Wahrlich Phar-



macy on Kings and Clark with J. Blocki up to the big fire in '71, when he lost all he had but his honor, industry and credit. Soon after the fire he sprouted out on the South Side bigger than ever, went into the manufacturing of pharmaceutical products, and

about five years ago retired, and followed his refined taste for traveling, for art, music, nature, history and philosophic study.

He was Local Secretary of the A. Ph. A. for the World's Fair Meeting of '93; Honorary President of the A. Ph. A., 1911-12; was twice President of the Chicago College of Pharmacy; President of the Illinois Pharmaceutical Association, 1882-83; established the Biroth Prize for Microscopy at the Chicago College of Pharmacy, and received the degree of Master of Pharmacy from the University of Illinois. But more than all of this he was a noble character, a loving, lovable man, gentle and pure as a child, extremely modest, and never lost his temper; never caused nor loved unpleasantness, and always loved to patch up things and conciliate. More than once did he take me in hand, when I was enjoying a little difference of opinion with other pharmaceutical pugilists, now dead, and can not file a demurrer, and therefore no names are mentioned. He, smiling, patted us on the shoulder, told us we were both right and wrong and fools at that. I caved in, admitted that I was guilty, and did not cross-examine him in his evidence that the others were fools.

The two Chicago schools would have been merged, through Henry's arbitration methods, had it not been for the appearance of a fighting rooster in the finishing home stretch.

Teasingly I often referred to him in my C. V. D. A. duties as a multi-millionaire. Not lately! Henry came to me and smiled and begged me to drop this exaggeration of his wealth, and added: "I don't want to be valued by my friends for what I *have*, but for what I *am*," and who in this wide world could resist that man's smile and his request? Not I. And I cut out the multi altogether.

He left with me in obedience to my urgent request for an autobiography, a most memorable manuscript, a glimpse into his soul life, "Observations on Religion, Ethics, Tolerance, Immortality, and Fraternal Love." He himself was timid about its value; did not think it worth while printing before he submitted the manuscript to the critical review of those of his friends who would honor his truthful character by fearless judgment. Unnecessary to say the judgment was unanimous, "sublime, superb, and a wrong if not preserved." Had he returned to us as he intended, he would have no doubt consented to the printing (and we hope that this will be done yet).

I re-read the manuscript since his death, and am awed at the beauty of the lofty philosophy of Henry's religion of Humanity.

Last but not least, Biroth was a charter member, and president in 1905 of the C. V. D. A., and an ardent, loyal adherent of this unique association. Had he lived he would have assisted President Jamieson in his praiseworthy effort to nationalize the Veterans' Association doctrine. He truly did his share to "Cheer the Living," and now that he is dead, he has our "Tears."

I for one, am not ashamed of tears for such a prince among men, the exalted and yet modest "Prince Henry," as his intimate friends addressed him.

If I analyze cause and effect correctly, I believe I can find the reason why I loved Henry as dearly as I did in the Law of Opposite Poles. My own makeup is about as different from what Biroth was as can be, but I bow my head to his superiority. He chose the better part, and I treasure his memory as dearly as any other of my mental possessions.

Biroth died in Baden Baden, on May 29, 1912. His daughter, Mrs. Massey, and her husband did not reach him in time.

W. BODEMANN.

<>

THOMAS DOLIBER.

Thomas Doliber, of Boston, a member of the class of 1869, the first graduating class of the Massachusetts College of Pharmacy, and for many years president of the Mellin's Food Company, died at New Bedford, Mass., on June 5, 1912, aged 76 years.

He, with S. M. Colcord, were partners with Theodore Metcalf, as the Theodore Metcalf & Co. of Boston. When the Mellin's Food Co. was established, Mr. Doliber became its president and remained such until his death.

He became a member of the Massachusetts College of Pharmacy in 1867 and served it in various capacities, faithfully and loyally. He succeeded Samuel A. D. Sheppard as Trustee and Chairman of Invested Funds of the Massachusetts College of Pharmacy, which position he held until a year ago.

Mr. Doliber has been a member of the American Pharmaceutical Association for 53 years.

He was a devoted Swedenborgian. The funeral services were held at the Church of the New Jerusalem, attended by many friends. The trustees of the college, accompanied by

many members of the corporation, attended the funeral in a body. J. W. E.

<>

HEUSTIS BENJAMIN ALLEN.

Heustis Benjamin Allen, of Richland Center, Wis., for many years a prominent druggist and a member of the State Board of Pharmacy, is dead after an illness of several months. Born in Walworth County, Wis., December 20, 1846, he began mercantile life as a drug clerk when but 13 years old. He learned the drug business in Beloit. In October, 1879, he went to Richland Center, and purchased a half interest in the drug business of F. P. Bowen, and in March, 1883, became sole proprietor. He was the first mayor elected after Richland Center was incorporated as a city, and held many positions of public trust. He was appointed a member of the Wisconsin State Board of Pharmacy by Gov. Davidson in 1906, and was reappointed in April, 1911, by Gov. McGovern; he was elected president of the board in 1910. He was a Mason, and his funeral was according to the Masonic ritual. J. W. E.

<>

HERSCHELL BOYNTON.

Herschell Boynton died at his home in Biddeford, Maine, on March 26, 1912, after a lingering illness. He was 65 years old. In the death of Mr. Boynton, the state of Maine loses a man of high attainments. Of a naturally retiring disposition, he was unusually well-informed in the technique of his profession and was proprietor of the largest drug store of the county. For many years he was an active member of the Maine Pharmaceutical Association. He became a member of the American Pharmaceutical Association in 1875. J. W. E.

<>

EDWARD LEWIS BALDWIN.

Edward Lewis Baldwin, of the Ferry Drug Co. of San Francisco, died at San Francisco on May 17, 1912. He has always taken a deep interest in all matters pharmaceutical. He joined the American Pharmaceutical Association in 1909. J. W. E.

<>

E. W. DITTRICH, M. D.

Wednesday the 19th of June there assembled at 159 E. 84th St., New York, members of the medical, pharmaceutical and other professions to pay a last sad tribute of respect to Dr. E. W. Dittrich, a prominent member and

former President of the Yorkville Medical Society, who died at the age of 51 years.

The deceased physician was a former pharmacist and a man of exceptional culture and professional attainments. He was always a welcome guest at pharmaceutical meetings, where his speeches, poured out from a mind richly stored with literary and scientific gems, commanded intense interest from his auditors.

Tall and shapely in figure, his geniality was expressed in his countenance and quickly won the hearts of those who met him. Dr. Dittrich was a characteristic German student, having graduated in arts at Bonn, in 1881, the University which graduated the Kaiser. He was also a graduate of the New York College of Pharmacy, and of the College of Physicians and Surgeons of this city, and Prof. of Dermatology in the N. Y. Post-Graduate School.

He was a member of several societies, amongst which were the Society of Medical Jurisprudence, the New York County Pharmaceutical Society, Deutscher Apotheker Verein, German Society, Odd Fellows, Free Masons, etc.

After the rendering of beautiful vocal and instrumental music, short eulogistic orations were made by the side of the coffin by representatives of the different societies. The pharmacists speaking were Emil Roller and Thomas Latham. The floral tributes filled three carriages to overflowing.

A numerous procession accompanied the remains to Greenwood Cemetery.

THOMAS LATHAM.

NOTE: A paper by Dr. Dittrich appeared in the June number of this journal.

KEEPING DYSPEPSIA OUT OF THE DISPOSITION.

"The business man who lets his dyspepsia get into his disposition, and who makes every one round him suffer because he himself is ill, is syndicating ill-health. We have no right to make others the victims of our moods. If illness makes us cross and irritable, makes us unjust to faithful workers who cannot protest, let us quarantine ourselves so that we do not spread the contagion. Let us force ourselves to speak slowly, to keep anger away from the eyes, to prevent temper showing in the voice. If we feel that we *must* have dyspepsia, let us keep it out of our head, let us keep it from getting north of the neck."—William George Jordan.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—Resolution adopted at the Boston Convention, 1911.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



CITY OF WASHINGTON BRANCH.

OUT-OF-DOORS MEETING.

On May 25, 1912, at 2:30 p. m., the regular May meeting of the City of Washington Branch was held at the Arlington Experimental Farm of the Department of Agriculture, at Arlington, Va. Dr. Rodney H. True of the United States Department of Agriculture, who has charge of the drug division of the farm, and Dr. Van Vliet, also of the United States Department of Agriculture, were awaiting the members of the Association and their guests (most of whom were late) at the McClellan gate of the Arlington National Cemetery, just opposite the entrance of the farm.

Mr. Flemer, with a party in his automobile, took the wrong road through the military reservation of Fort Myer while en route and had to retrace part of his journey. Mr. Hilton took the old canal road and found the "going" slow and dusty. The Secretary, in his announcements to members, advised them to take the 2:20 train, when he should have informed them that the train left at 2:15, hence a number of members missed that train, but were fortunate to get the next one, but fifteen minutes later.

The first experiment pointed out by Dr. True on the farm was that relative to the raising of wheat, with the aid of a static current of high potential. Two fields of wheat,

side by side, were inspected, one in which the influence of the electric current was being tested, and the other where the wheat was being raised without the presence of the current.

None of the members present were good enough farmers to be able to tell what difference, if any, existed between the two crops, but it was explained that the surrounding atmosphere was altered, and some effect was had on the soil by the use of the electric current, and that in several foreign countries, decidedly beneficial results had been obtained.

An inspection of modern harrows and plows followed, and at this point the Superintendent of the Farm, Mr. Butterfield, made his appearance and welcomed the members most cordially.

Attention was invited to the methods of preparing the land for the next year's crop. In one field, rye was being turned under, while in another rye and vetch were shown, ready to be plowed under. Dr. True explained, at much length, the use of each for fertilizer, and the necessity for the presence of decayed vegetable matter in the soil.

Dr. True then showed that part of the farm devoted to the belladonna plant. Experiments to determine the best fertilizer for this plant are being carried on, on a most extensive scale. Numerous beds of plain soil, and of the soil treated with varying proportions of different fertilizers, have been used in the study of this particular feature.

In all of the experiments with this plant, the plant gets its start in the hothouse and is transplanted after the first steady warm weather makes its appearance.

In previous years, assay has shown very varying quantities of atropine in the belladonna, and plants taken from the same and different rows showed very different strengths. Taken as a whole, the plants averaged the required strength as set forth in the U. S. P., but individual plants would show a much higher percentage than required, while others fall far below the standard.

To produce plants assaying very high in atropine, the seed of plants which yielded high percentage assays last year have been planted, and it is hoped that only plants, assaying high in atropine, will be produced.

Strophanthus is also being experimented with in the same way as belladonna.

Dr. True next showed the rose gardens,

It is the ambition of the Department to produce a rose with a more fragrant odor than the one now so extensively used in Europe for the production of oil, and yet not sacrifice the weight of the petals and oil producing qualities. In this ambition they have apparently succeeded in the hybrid-rose, *Rosea Parfuma de l'Hay*, which possessed a most pleasing odor, which could be noted many yards away, and an abundance of heavy red petals. Dr. True presented each of the members with a number of the best looking blossoms from these plants.

A further inspection of the rose gardens showed wild roses, blue roses, and nearly all of the well-known cultivated rose plants. A large number of foreign roses were also shown.

Just beyond the rose gardens, the drug gardens containing nearly all of the plants official in the U. S. P., and nearly all of the unofficial plants used and sold in drug stores, are located. More belladonna plants were shown, with couch grass, mandrake, sanguinaria, golden seal, spigelia, colchicum, convallaria, ginseng, cascara, blue cohosh, wintergreen, digitalis, gelsemium, orris, tansy, lavender, caraway, calendula, hedeodoma, wormwood, lappa, boneset, sumach, rosemary, conium, peppermint, hops, valerian, tarragon, bee balm, and a score more.

To attempt to describe all the plants, and the experiments which are being made with each, the process of cultivation, and the many interesting features about them, would take a volume as large as the Pharmacopœia. The best recommendation that can be made, is to visit the gardens.

Much fun was had in trying to guess the various plants without the aid of the indicators at the end of each row. Had there been a "booby" prize, nearly every member would have been entitled to it.

The last part of the visit was taken up in the peony bed, where additional flowers to take home were secured. Here some of the finest specimens of peonies have been produced, and considerable experimental work is being done with plants to be used for decorative purposes in the various parks in Washington.

A number of the members returned directly home, while others took advantage of the opportunity to go through the Arlington National Cemetery, which adjoins the farm and

through the military reservation of Fort Myer, which adjoins the cemetery.

The most gratifying feature of the meeting was the unusual interest shown, more than thirty members turning out, and this number was augmented by guests, a number of senior students from Johns Hopkins University of Baltimore, and scientists from the Department of Agriculture.

The Board of Pharmacy of the District of Columbia was well represented, as well as that from Virginia.

The Association thanks Dr. True most heartily for the pleasant outing he furnished, for the fund of information he gave out, and for the good time that every one had.

HENRY B. FLOYD, Secretary.

<>

ST. LOUIS BRANCH.

The St. Louis Branch of the American Pharmaceutical Association held a special meeting on Friday afternoon, June 7, and through the courtesy of Doctor George T. Moore, director of the Missouri Botanical Garden (Shaw's Garden), and under the guidance of Mr. W. W. Ohlweiler, the following made a general inspection of the garden: William K. Ilhardt, B. J. Herman, Leo H. Suppan, W. P. Overstreet, Solomon Boehm, Martin J. Noll, Louis Lieberstein, Theodore Hagenow, H. O. A. Huegel, George Schen, E. A. Sennewald, J. W. Mackelden, Arthur C. Schulte, Doctor G. M. Heath, J. B. Seiler, George Haugen, J. A. Wilkerson, Doctor W. D. Auferheide and Carl T. Buehler.

This afforded the members a splendid opportunity to see hundreds of medicinal plants in cultivation. J. W. MCKELDEN.

<>

NEW YORK BRANCH.

A post-season meeting of the New York Branch was held June 10, on which occasion Dr. Eugen Unna, of Hamburg, Germany, delivered a most interesting address on "Ointment Bases."

Dr. Unna, who is the son of Prof. P. G. Unna, the renowned dermatologist, considered the chief ointment bases, lard, suet, wool-fat, and the petroleum bases from the standpoint of the pharmacist and the therapist, dwelling chiefly upon their physical adaptability to the uses for which they are desired. The shortcomings of each were pointed out, the insta-

bility of the animal fats, and the lack of the property of absorbing liquids which is a fault of the mineral fats.

The speaker discussed the various combination bases designed to overcome the shortcomings of the individual components, reviewing briefly the work of P. G. Unna and others.

To wool-fat in its several forms the speaker paid the greatest attention. It was his opinion that, as this fat is not a stable one and as its value lies in its power to absorb liquids, the crude fat possessing this power to a greater extent, is more useful than the purified forms. The decrease in the power of absorption when wool-fat is purified he attributed to the loss of the oxycholesterin group of alcohols, as these possess the greater portion of the property of absorbing liquids which characterizes wool-fat. In a table, the doctor showed the results of the saponification of wool-fat and the process of separating the oxycholesterin group. He then described the usefulness of this group *per se* as a component of an ointment base, stating that if 5 per cent. of the mixed alcohols of this group, called eucerin wax, were mixed with petrolatum, the mixture would absorb readily up to 500 times its weight of water.

After exhibiting a table showing a comparison of the physical properties of animal and mineral fats and eucerin, the speaker related some of the formulas for ointments now in use in Germany in which eucerin is used. He remarked that the eucerin base was particularly advantageous in mercurial ointment.

At the conclusion of his address, Dr. Unna demonstrated the ease with which water or glycerin may be incorporated with eucerin.

The subject introduced by Dr. Unna was discussed by Messrs. Dickman, Weinstein, Wimmer, Raubenheimer, and Lascoff; and the Branch formally thanked the speaker of the evening.

For the committee on the progress of pharmacy, Otto Raubenheimer reviewed among others the following recently published articles: "A Knowledge of the Glucosides of Digitalis," by Kraft; "The Constituents of Digitalis," by Tanlbach; "Yohimbine Schmidt," by Kobert; "The Biological Valuation of Sarsaparilla," by Kobert; "The Active Constituents of Ergot," "The Toxicity of Nitro-benzene," "Benzin Accidents in Germany," and "A New Test for Japanese Oil

of Peppermint." He also told of new patents granted in Germany on a preparation of digitalis, colloidal sulphur, and other things, and referred to statistics on the cultivation of medicinal plants in Austria and attendance at pharmaceutical schools in Germany.

Reports were made by Hugh Craig and Otto Raubenheimer as delegates to the meetings of the New Jersey Pharmaceutical Association and the American Medical Association respectively.

As a committee to cooperate with a similar committee of the Medical Society of the County of New York in considering a plan for the certification of pharmacies, President G. C. Dickman appointed the following: C. O. Bigelow, chairman; W. C. Anderson, Peter Diamond, G. C. Dickman, J. L. Lascoff, C. H. Lowe, T. D. McElhenie, Otto Raubenheimer, John Roemer, and John Scavo.

HUGH CRAIG, Secretary.



NORTHWESTERN BRANCH.

The regular summer meeting was held at Winona, Minn., Wednesday afternoon, June 19. The Branch also held a joint meeting with the Scientific and Practical Section of the Minnesota State Pharmaceutical Association prior to its separate meeting.

The election of officers resulted as follows: President, Stewart Gamble, Hennepin avenue and Ninth street, Minneapolis; Secretary-Treasurer, Prof. Edwin L. Newcomb, College of Pharmacy, University of Minnesota, Minneapolis. The election of Dean F. J. Wulling as Council Representative until 1915 at a previous meeting, was ratified.

The address of the retiring president, Mr. W. A. Frost, of St. Paul, was somewhat brief on account of the pressure of a large program. Mr. Frost expressed the hope that all future meetings might be as successful and profitable as the one that was just then closing, which, according to the consensus of those present, was one of the best scientific sessions held in the Northwest.

Under the chairmanship of Dean Wulling, the following program was carried out, beginning at 1:30 p. m. and closing at 6:20 p. m. It is noteworthy that the attention of all present was closely held to the proceedings for a solid five consecutive hours.

1. "A Report on the Examination of a Series of Drugs Bought in the Open Minne-

sota Market," by Prof. G. Bachman. This paper reported the analysis of something over one hundred drugs and preparations examined recently in the pharmaceutical chemistry laboratory of the University of Minnesota.

2. "Suggested Improvements in a Number of U. S. P. Preparations," by Prof. G. Bachman. The improvements suggested covered *Liquor Potassii Arsenitis*; *Liquor Cresolis Compositus*; *Elixir Ferri, Quininae et Strychninae Phosphatum*; and *Glyceritum Amyli*.

3. "A Historical Paper on the College of Pharmacy of the University of Minnesota," by Frederick J. Wulling. This paper covered the activities and history of the College during the past year and is the usual annual installment which Dean Wulling is writing on the history of the College.

4. "An Interview with S. W. Melendy on Early Minnesota Pharmacy," by Frederick J. Wulling. Mr. Melendy was to have prepared a paper on the topic of the interview, but on account of illness became temporarily incapacitated to write. Dean Wulling then interviewed Mr. Melendy and reported the interview in the paper which covers the pharmacy of Minneapolis in the early and late seventies.

5. "The College of Pharmacy of the University of Minnesota," by Mr. A. G. Erkel. This most interesting paper pointed out particularly that pharmacists do not sufficiently appreciate the fact that their calling is a trust in their hands and upon which each member, as a trustee, is bound to administer according to the duties which this trust imposes.

Upon vote of the Northwestern Branch and also later upon the vote of the State Association, printed copies of this paper are to be sent to every pharmacist in Minnesota.

6. "Early Minnesota Pharmacy," by A. H. Rose. Mr. Rose reviewed the conditions relating to pharmacy in Minnesota in the fifties and sixties. Mr. Rose, being one of the early pioneer pharmacists of Minnesota, was in a position to write authoritatively as well as interestingly. This paper and the interview with Mr. Melendy are the beginning of a series of papers on Minnesota pharmacy that it is hoped will be written in the near future as a possible basis of a comprehensive work of the history of pharmacy in the Northwest.

7. "The Cultivation of Belladonna in the Medicinal Plant Garden of the College of Pharmacy of the University of Minnesota and Elsewhere," by Manley H. Haynes. This paper embodied part of the research work that Mr. Haynes is prosecuting in the College laboratories toward the master's degree in pharmacy.

8. "The Prerequisite in the State of Washington," by A. F. Maxwell, member of the Washington State Board of Pharmacy. The writer briefly reviewed the conditions pharmaceutical in Washington which lead up to the prerequisite requirement by the Washington board. This paper prompted a vote to test the sentiment of those present on the prerequisite question. Eighty-four per cent. of all present voted for the prerequisite.

9. "A Review of Recent Progress in Pharmacy," by F. A. Upsher Smith.

10. "Cataphoresis or Iontophoresis," by F. A. Upsher Smith. This was a most instructive paper which dealt with the latest developments in ionic medication.

11. "As It Looks Today," by A. D. Thompson. Mr. Thompson was absent and George A. Welch read the paper. It related to the evils of price-cutting in the large cities and advocated higher ethical standards for pharmacy.

12. "Peroxide of Hydrogen Production, Past and Present," by Dr. J. S. Brewer. This very interesting and exhaustive paper covered the subject under the following headings: Historical; process of manufacture; consumption of the medicinal product; properties; method of clarifying; impurities; preservatives; corking the bottles; packing for shipment, etc.

13. "The Cultivation of Medicinal Plants as an Educative Factor in a Pharmacy Curriculum," by Prof. Edwin L. Newcomb. The recent additions in both area and plants to the medicinal plant garden of the College of Pharmacy of the University of Minnesota were reviewed and the value of the garden as an instructional factor emphasized.

14. "The Future of Pharmacy as a Profession," by Richard J. Messing. This was an enthusiastic and forceful advocacy of better training for those entering the ranks and for higher ideals for those already in them. The reading of the paper was repeatedly interrupted by applause.

15. "Medicinal Plants Growing in the

Vicinity of Winona," by Prof. P. C. Myers of the Winona High School. This paper was illustrated with autochrome lantern slides. Something over forty medicinal plants were reviewed and about one-half that number illustrated with the lantern.

The College of Pharmacy exhibited about 250 of its more important medicinal plants. This exhibit aroused the interest of everyone present. The remarks concerning it were all in the superlative.

The next meeting will be held either in Minneapolis or St. Paul sometime during the winter.

F. J. WULLING, Secretary.



NASHVILLE BRANCH.

On Thursday, June 13, the regular monthly meeting of the Nashville Branch was held in Furman Hall, J. O. Burge presiding.

The election of officers was postponed until the next meeting in September. A resolution was passed recommending the passage by Congress of a bill entitled An Act to Promote the Efficiency of the Medical Department of the United States Army, being House Bill No. 22263 and Senate Bill No. 5725, which seeks to increase the rank and pay of pharmacists in the United States Army.

On motion of R. L. Eves, seconded by Dr. J. R. McDaniel, the President of the Branch was instructed to invite the American Pharmaceutical Association to meet in Nashville in 1913.

A committee was appointed to confer with the Tennessee Pharmaceutical Association at their next annual meeting July 9, at Chattanooga, in regard to its meeting here next year jointly with A. Ph. A., in case the A. Ph. A. decides to meet here.

The reports of Secretary W. R. White and Treasurer C. C. Young were received and approved.

"The Study and Identification of Crude Drugs" was the subject for discussion. A very large and rare collection of crude drugs were exhibited by Prof. E. A. Ruddiman, belonging to the Pharmacy Department of Vanderbilt University, which were extremely interesting and instructive.

The same subject, however, will be continued at the next meeting in September.

WILLIAM R. WHITE, Secretary.

Council Business

COUNCIL LETTER NO. 21.

PHILADELPHIA, JUNE 24, 1912.

Members of the Council:

Motions 40 (New Record Book), No. 41 (Journalizing the Report on the Progress of Pharmacy), and No. 43 (Election of Applicants for Membership from Nos. 215 to 235 inclusive) have each received a majority of affirmative votes.

Motion No. 42 (Tentative Program for 1912 Annual Meeting) has brought forth requests for changes by the chairmen of Sections, and these changes will be made, and the program printed in an early issue of the JOURNAL.

With reference to *Motion No. 39 (Temporary Secretary of Scientific Section)*, the following has been received from George M. Beringer:

"In my desire to have the work of the Association proceed uninterruptedly, I made a motion a short time ago that Professor F. P. Stroup be named as Secretary Pro Tem. of the Scientific Section, as Secretary Prof. C. H. LaWall found that he would not be able to attend the Denver meeting. In making this motion I overlooked the fact that the Section had already selected an associate who was in line of succession to carry on the work in the absence of any of its officers.

To correct this error I now desire to withdraw the name of Prof. F. P. Stroup as nominee for Secretary Pro Tem. and substitute the name of F. R. Eldred. This is done with the approval of Prof. Stroup and with a desire to straighten out the inadvertent error and so to avoid any misunderstanding."

Do you approve of substitution of name of F. R. Eldred for F. P. Stroup in *Motion No. 39*? This will be known as *Motion No. 44 (Temporary Secretary of Scientific Section)*.

The following communication has been sent by the Chairman of the Committee on Publication to the Members of this Committee:

PHILADELPHIA, JUNE 14, 1912.

Committee on Publication:

GENTLEMEN—The Committee on Publication is charged with the duty of issuing for the Association its annual volume or Year Book.

The manuscript copy of the Report on the

Progress of Pharmacy (which constitutes the larger part of the Year Book) for the eighteen months ending December 31, 1911, is now in the hands of the General Secretary and under the best of conditions the book cannot be printed and distributed before the Annual Meeting in August.

At the Boston (1911) Meeting it was estimated that the Report on the Progress of Pharmacy for 1911 would cost \$2500. Later, the salary of the Reporter on the Progress of Pharmacy was increased \$450, making the probable cost about \$3000. Of this amount the expressage and postage was estimated at \$400. The probabilities are, however, that it will be over \$500, as the expressage and postage for the Proceedings was \$503.72 in 1907, \$602.12 in 1908, and \$684.90 in 1909. The Year Book will be smaller than the Proceedings and the expressage and postage should be, of course, somewhat less.

In Council Letter No. 20, Motion 41 (Journalizing the Report on the Progress of Pharmacy), Edward Kremers moved, seconded by A. H. Clark that "the Council reconsider at the Denver, 1912, Meeting the question of publishing the Report on the Progress of Pharmacy as a separate volume, and to add the money thus saved to the JOURNAL, which could just as well publish the abstracts and do this at a much earlier date. The Reporter on the Progress of Pharmacy could be added to the Editorial Staff of the JOURNAL."

This motion has received a majority of affirmative votes of the Council members, and but five negative votes.

The suggestion has been made that the Year Book for 1911 be printed in the last four issues of the JOURNAL for 1912 as a supplement to the regular issues. By so doing, not only could the expenses of binding and distributing in the ordinary form be saved, but the material would be in the hands of the members almost as quickly as if we went ahead according to the original plan. The matter would probably not amount to more than 400 or 500 pages of 8-point composition or about 100 pages additional in each of the last four issues, instead of 400 pages in a separate volume.

Then in 1913, the Report on the Progress of Pharmacy could be issued as a supplement to the JOURNAL in March, June, September and December, with the official data, etc., in the December number.

With reference to the Year Book, Editor Beal writes: "It would save a thousand dollars a year at the very least, and possibly two thousand, to publish the Report in the JOURNAL, and I feel that eventually this will be done. The argument in favor of the Report as a separate volume is mainly due to sentiment, and the question for us to decide is whether this sentiment is worth what it costs? While the cessation of the annual volume would be a detriment in some respects to the membership, the greatly enhanced value of the

JOURNAL, if the additional money were spent upon it, should I think more than offset it."

Dr. H. M. Whelpley writes: "I am inclined to feel that it is best to do away with the Year Book and publish everything in the JOURNAL. It looks to me now as if this would be a matter of great convenience as well as a saving of money. If you think best we might put the matter squarely before the Council. If we publish only one issue of the Year Book, it will indeed be an orphan, or rather without brothers and sisters."

Your Chairman presents this question to you, and asks your immediate consideration of the matter, so that if it is decided to place the matter before the Council it can be done at once.

This Committee has not the power of itself to decide the question. It was directed by the Association to publish the book in the early part of 1912. This, however, has been impossible because of the delay in receiving the manuscript.

Hence, the Committee must go ahead and issue the book unless the Council decide otherwise. The only thing to do, apparently, if a majority of the members of the Committee on Publication wish to journalize the Year Book, is to offer a motion in Council—the Executive body of the Association—stating that since numerous members of the Council have favored the motion of Dr. Kremers, and since it will be impossible to print the book before the Denver (1912) meeting in August, that the General Secretary be requested to withhold the matter from the printer until the subject can be more thoroughly considered at Denver.

Do you vote in favor of having such a motion submitted to the Council?

Very truly yours,
J. W. ENGLAND,

Chairman of Committee on Publication.

In response to this, the Committee, by a vote of seven in the affirmative to one in the negative, agreed to the motion.

Do you, as a member of the Council, favor the motion that the General Secretary of the Association be requested to withhold the matter for the Year Book (Report on the Progress of Pharmacy) for 1911 from the printer until the subject can be more thoroughly considered at the Denver (1912) meeting?

This motion will be regarded as *Motion No. 45 (Postponement of Publication of Year Book (Report on the Progress of Pharmacy) for 1911 until after the Denver (1912) meeting)*.

J. W. ENGLAND,
Secretary of the Council.

415 N. 32d St., Philadelphia, Pa.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL, unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

AUGUSTUS TRACEY,
From 471 G St. S. W., Washington, D. C.
To 479½ F St. S. W., Washington, D. C.

R. C. REILLY,
From 3300 Merramec, St. Louis, Mo.
To Box 1609, Los Angeles, Cal.

W. J. NOLL,
From 925 Goodfellow, St. Louis, Mo.
To 5591 Vernon, St. Louis, Mo.

MORRIS KANTOR,
From 1388 Clinton Ave., New York, N. Y.
To 522 West 152d St., New York, N. Y.

C. C. CANNON,
From Vineyard Haven, Mass.
To P. H. & M. H. S., Chicago, Ill.

GEORGE WILLIAM COLLINS,
From 2601 Olive St., St. Louis, Mo.
To 3400 Morgan St., St. Louis, Mo.

WILLIAM H. SMIJH,
From Park Ave., White Plains, N. Y.
To Bronx Manor, Yonkers, N. Y.

WILLIAM A. HERRICK,
From 901 E. 75th St., Chicago, Ill.
To 213 E. Mills St., Beaver Dam, Wis.

H. M. BILLINGS,
From 28 W. 50th St., New York, N. Y.
To Care Forrest Walker, South Poland,
Maine.

FRED I. LACKENBACH,
From 970 Post St., San Francisco, Cal.
To Butler Bldg., San Francisco, Cal.

SIDNEY C. YEOMANS,
From Long Beach, Calif.
To 140 Nassau St., New York, N. Y.

JEROME J. KEENE,
From 354 W. Washington St., Indianapolis,
Ind.
To 124 E. 22d St., Indianapolis, Ind.

LEVI WILCOX,
From 22 Mitchell Ave., Waterbury, Conn.
To 115 Woodlawn St., Waterbury, Conn.

THEODORE J. BRADLEY,
From 43 Eagle St., Albany, N. Y.
To Care Mass. College of Pharmacy, Bos-
ton, Mass.

M. N. FORD,
From Delphos, O.
To Secretary State Board of Pharmacy,
Columbus, O.

LEON M. GUERRERO,
From 34 Nueva Ermita, Manila, P. I.
To 117 Nueva Ermita, Manila, P. I.

DANIEL M. RAND,
From 12 Westcott St., Portland, Maine.
To 876 Main St., Westbrook, Maine.

FRANK H. KIRK,
From 1400 Spruce St., Philadelphia, Pa.
To Curwensville, Pa.

HERMAN J. WEBER, Sgt.
From Honolulu, H. I.
To Fort Matt, Salem, N. J.

LIVING UP TO ADVERTISEMENTS.

Many druggists lose more than the value of their advertisements by not living, or dealing, up to them. A customer attracted to a store by an advertisement of an article and disappointed by finding that the value of the article was grossly exaggerated or who meets with poor service is not merely disappointed in a bargain, he is disappointed in the store and its methods of doing business, and he takes care not to go there again. Successful business men have learned that the poorest kind of advertising is that kind intended to fool people or which fools them by leading them to expect goods or service that the advertiser does not give them. Everything done in a drug store is an advertisement of its quality and way of doing business. The clerk who jokes and laughs with a friend while wrapping up a prescription for a waiting customer is an advertisement, and a poor one, of the store or himself; the proprietor who has to hunt around and rummage through drawers for something asked for by a customer is an advertisement of poor methods and lack of system. There are too many drug stores in the average town or city nowadays for the owner or clerk in any one to neglect anything that will attract trade and hold it, and when everybody is advertising themselves in some way it is safest and best to advertise oneself by doing things as well as promising them.—*American Druggist*.

THE STORE PAPER.

According to the testimony of a good many druggists, there is no kind of advertising so rich in returns for the druggist as a store paper published each month. If no druggist in your territory is issuing such a paper, they earnestly advise their brother druggists to launch one at once.

Call it Smith's Monthly, or Smith's Bulletin, or Smith's whatever-you-please. Have it printed just as a regular journal or paper would be, with a title, publisher's name, and all that sort of thing. If you can make the journal interesting enough so that people will look forward to its arrival every month, you have gained your point, for you may be sure that if they read the text matter, they can scarcely avoid reading some of the display ads.

Possibly you are thinking this rather an expensive means of advertising, and you are not wholly wrong. It is rather expensive, but it richly pays for itself in returns. The results will far more than pay you for it if you have a journal that is interesting and attractive and gotten out as it should be. It will make your name and business familiar in every home in the neighborhood.

Indeed, it will be like a personal visit from you every month. Instead of sinking into obscurity and being lost in a hurrying city, you will be known all over your section, and when people want anything in the drug line they will at once think of you. A store paper will bring you more new customers and keep more of them for you, than any advertising plan known.—*N. A. R. D. Notes.*

LIQUIDS BY WEIGHT.

All liquids by weight is the ideal manner of handling pharmaceuticals, but the old plan of solids by weight and liquids by measure has such a firm hold on the pharmaceutical world that it is difficult to make the change and have the rule of both solids and liquids by weight followed in commercial transactions. The government has decided that wholesale dealers must henceforth sell liquids by weight instead of by measure. The contents of the container must be shown by stamping on the bung stave of the barrel or cask, or upon the outside of the can, the gross weight, the tare and the net weight of the contents of the package. The time may come when all business transactions and

pharmaceutical manipulations will weigh liquids as well as solids.—*Meyer Brothers' Druggist.*

DR. OSSLER'S INVITATION TO THE ANTI-VACCINATIONISTS.

"I will go into the next severe epidemic with ten selected vaccinated persons and ten selected unvaccinated persons. I should prefer to choose the latter—three members of Parliament, three anti-vaccination doctors if they could be found, and four anti-vaccination propagandists. And I will make this promise—neither to jeer nor to jibe when they catch the disease, but to look after them as brothers, and for the four or five who are certain to die I will try to arrange the funerals with all the pomp and ceremony of an anti-vaccination demonstration."—*New England Medical Journal.*

WHY NOT IN THE U. S. ALSO?

The London Board of Trade has received a report from the British Consul at Christiania, Sweden, pointing out that private persons in Norway are not permitted to receive patent or proprietary medicines from abroad by post. On the arrival of such parcels, which are opened at the customs house before delivery, the contents are stopped by the authorities. In order to comply with the law, it appears necessary for private persons desiring to import medicines for their personal use to have the parcel addressed to a resident chemist, who thus becomes responsible for the importation.—*National Druggist.*

OLD REGRETS AND NEW WISDOM.

"The man who looks back upon his past life and says, 'I have nothing to regret,' has lived in vain. The life without regret is the life without gain. Regret is but the light of fuller wisdom, from our past, illumining our future. It means that we are wiser today than we were yesterday. This new wisdom means responsibility, new privileges; it is a new chance for a better life. But if regret remain merely 'regret,' it is useless; it must become the revelation of new possibilities, and the inspiration and source of strength to realize them. Even omnipotence could not change the past, but each man, to a degree far beyond his knowing, holds his future in his own hands."—*William George Jordan.*

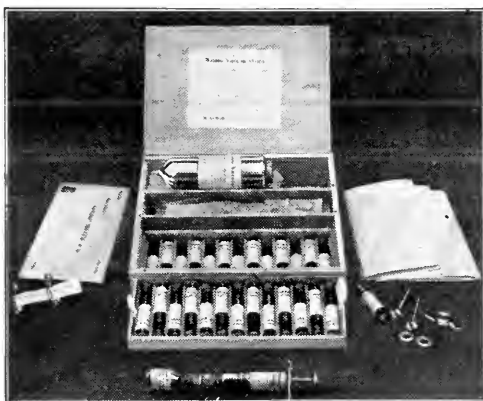
Prevent Hydrophobia, or Rabies

There is no known cure after symptoms have developed.
The disease may be prevented by prophylatic injections of

Rabies Vaccine

Generally known as "THE PASTEUR TREATMENT"

WE prepare Rabies Vaccine and distribute it so that it is no longer necessary to send patients away to receive treatment, because the Vaccine can be administered at home.



Rabies Vaccine Outfit (as sent with Initial Doses)

The Method and directions are so complete and simple that any physician can give the treatment without previous experience. It is no more difficult than an ordinary hypodermatic injection.

Administering the treatment at home by the attending physician means a saving of time, money and worry for your patient.

Our Rabies Vaccine Laboratory is constantly "on duty," and all orders receive immediate attention.

It is important to begin the injections as soon as possible after exposure.

Working Bulletin on Rabies Vaccine, giving full information, mailed upon request.

Telegraph all Orders direct to
H. K. Mulford Company, Chemists
Philadelphia

THE STANDARD OF EXCELLENCE



GEM ICE CREAM SPOON, \$1.50.

The claims made for merit in other dishers find their realization alone in the superior merit of the "GEM."

ALL DEALERS

PHILADELPHIA COLLEGE OF PHARMACY

FOUNDED 1821

Offers a complete course in Pharmacy, Chemistry, Materia Medica, Botany and Pharmacognosy leading to the degree of Doctor in Pharmacy.

Also instruction in special branches and Post Graduate work.

For full information regarding entrance requirements, tuition, etc., address

J. S. BEETEM, Registrar, 145 N. 10th St., Philadelphia, Pa.

SAL LAXA S & D

You know the formula

It's on the label in full

We know the drugs used are pure

and are combined in the right proportion

Thousands of physicians know that

Sal Laxa S & D is

the ideal, palatable, saline laxative

Three sizes, \$2, \$4, \$8. Your Jobber can supply it

SHARP & DOHME, Baltimore

New York

Chicago

St. Louis

Atlanta

New Orleans

Philadelphia

The Roessler & Hasslacher Chemical Co.

100 William Street, New York

invite the attention of the Pharmaceutical Profession to their new series of

Peroxygen Products, or Active Oxygen Preparations

VIZ:

SODIUM PERBORATE, a powder which, dissolved in water, furnishes instantaneously **Hydrogen Peroxide Solution** of alkaline reaction, a **non-irritant to mucous membrane**, even if applied in powder form. The powder is eight times as strong as ordinary H_2O_2 .

ZINC PEROXIDE, odorless fine powder, antiseptic, bactericide, used in surgery, dermatology, etc.

MAGNESIUM PEROXIDE, for internal use, non-toxic tasteless powder, it replaces bismuth salts in intestinal disinfection.

CALCIUM PEROXIDE, antacid and germicide.

STRONTIUM PEROXIDE, a dermatological agent.

PEROXIDE ZINC SOAP, U. S. Patent 787776, "Life to the Skin," contains actually 10% ZnO_2 , the **only real Peroxide Soap**, complying with requirements of National Pure Food and Drugs Act. An ideal Skin and Toilet Soap.

All the above have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

ORDERS FILLED BY THE WHOLESALE DRUG TRADE.

To Colleges of Pharmacy

Do you know that we make a specialty of importing "DUTY-FREE" glassware, apparatus and chemicals for colleges and universities—sending our own representative abroad each year to make our selections?

Do you realize that the German glassware is immensely superior to the American product, and costs much less?

Do you realize how little trouble it is to import your goods? No more than to order from a local dealer.

Tell us what you want—select from any catalogue—and we will quote figures that will surprise you.

THE KAUFFMAN-LATTIMER CO.

COLUMBUS, OHIO

ST. LOUIS COLLEGE OF PHARMACY

DAY LECTURES AND DAY WORK

THIS COLLEGE was organized and is managed by an association of pharmacists to provide a thorough course of pharmaceutical instruction for the young men and women who desire to qualify themselves as pharmacists.

FACULTY

OTTO AUGUSTUS WALL, Ph. G., M. D., Professor of Materia Medica, Pharmacognosy and Botany.
 JAMES MICHENER GOOD, Ph. G., Hon. M. D., Ph. M., Professor of Theory and Principles of Pharmacy.
 FRANCIS HEMMI, Ph. G., Hon. M. D., Professor of Practical Pharmacy.
 HENRY MILTON WHELPLEY, Ph. G., M. D., Professor of Microscopy and Dean of the Faculty.
 CHARLES EDWARD CASPARI, A. B., Ph. D., Ph. G., Professor of Chemistry and Physics.
 OTTO AUGUSTUS WALL, Jr., Ph. B., M. D., Instructor in Pharmacognosy and Lecturer on Accidents and Emergencies.
 EUGENE PEYTON COCKRELL, Ph. B., M. D., Instructor in Microscopy.
 WILLIAM HAMILTON LAMONT, Ph. G., Lecturer on Commercial Pharmacy.
 WILLIAM K. ILHARDT, Ph. G., Ph. C., Instructor in Theoretical Pharmacy.
 HUBERT SPENCER MERRELL, Jr., Ph. B., Ph. C., Instructor in Chemistry.
 JOHN W. MACKELDEN, Instructor in Microscopy.
 FRANK ALLEN HAINES, Ph. G., Ph. C., Assistant in Microscopy.

The Forty-eighth Annual Session opens September 17, 1912, and continues seven months.

For further information write to the College, 2108-2110 Locust Street, ST. LOUIS, MO.

NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY

¶ A university school in the heart of Chicago, the educational and commercial center of the Middle West. Instruction laboratories and library give the best to be had. Solid courses in Ph. C. and Ph. G. degrees. The school cannot supply the demands for its graduates. A fine esprit de corps with hearty co-operation of faculty and students. Write now for "Typical Lessons in Pharmacy."

NEXT SESSION OPENS SEPTEMBER 23.

CHAS. W. PATTERSON, Secretary

Room 410, Northwestern University Building, Chicago, Illinois

**THE SCHOOL OF PHARMACY
of the UNIVERSITY OF ILLINOIS**

CHICAGO COLLEGE OF PHARMACY

The Fifty-third session begins September 17, 1912.

Courses leading to the degree of Graduate in Pharmacy and of Pharmaceutical Chemists are offered.

For announcement or other information, address

W. B. DAY, Actuary

Michigan Boulevard and Twelfth Street, Chicago, Illinois

**PITTSBURGH COLLEGE OF PHARMACY
SCHOOL OF PHARMACY UNIVERSITY OF PITTSBURGH**

Offers a two years course leading to the degree of Graduate in Pharmacy.
 Three years for the degree of Doctor in Pharmacy.

For catalogue address Dr. J. A. Koch, Dean, Pittsburgh, Pa.

**DEPARTMENT OF PHARMACY—UNIVERSITY OF MARYLAND
(MARYLAND COLLEGE OF PHARMACY 1841-1904)**

Lombard and Greene Sts., Baltimore Md.

Complete Course of Lectures and Laboratory Instruction, covering two sessions of thirty-two weeks each. Catalogue giving full information mailed on application to the Dean.



THE MARK OF QUALITY!

MASSACHUSETTS COLLEGE OF PHARMACY

CORNER OF ST. BOTOLPH AND GARRISON STREETS : : : BOSTON, MASS.

The year begins the last week in September and ends the third in May.

Offers courses of instruction covering two and three years, and confers the degrees of Doctor of Pharmacy (Pharm. D.) and Pharmaceutical Chemist (Ph. C.).

A general education equivalent to the completion of one year in a high school, as shown by certificate or examination, is required for entrance.

Open to both sexes. All courses have compulsory laboratory work connected.

The demand for graduates of this school is in excess of the supply

SCHOLARSHIPS. The Massachusetts State Pharmaceutical Association, the Eastern Drug Co., the Brewer & Co., the Robert W. Greenleaf and the Julian W. Baird Scholarships are open to students of the school.

EMPLOYMENT. On application from prospective students the Dean will be pleased to assist in securing situations in drug stores, where the students will be allowed the necessary time to attend one or more courses.

For further information and catalogue, write to

THEODORE J. BRADLEY, B. S., Ph. G., Dean

R. HILLIER'S SON COMPANY

IMPORTERS AND DRUG MILLERS

We Carry a Full Line of

Crude, Ground and Powdered Drugs

100 William Street, New York

We make a specialty of EXTRA FINE POWDERS for tablet manufacturers.

The Druggist's outlook upon things, like that of everyone else, changes with time. No doubt our announcements for

N. Y. Q. Products

have changed the outlook of many a druggist toward this brand of medicinal chemicals, but we trust that most of the cordial and welcome support that comes to us from the retail druggist is based upon the excellence and purity of the goods themselves, for these deserve all credit.

NYQ

Potassium Iodide
Morphine
Acetanilide, C.F.
Cocaine
Bismuth Subnit.

Diacetyl-Morphine
Quinine
Strychnine
Codeine
Thymol Iodide

New York Quinine and Chemical Works, Ltd. New York City

POWERS-WEIGHTMAN-ROSENGARTEN CO.

CODEINE, ALKALOID AND SALTS

MORPHINE SULPHATE

QUININE SULPHATE

STRYCHNINE

BISMUTH SUBNITRATE

POTASSIUM IODIDE

MERCURIALS

ACID CITRIC

IODINE RESUBLIMED

GOLD CHLORIDE

IN HERMETICALLY SEALED GLASS TUBES

ETHER NITROUS CONCENTRATED

IN HERMETICALLY SEALED GLASS TUBES

COMPLETE LIST ON REQUEST

Supplied by Jobbers Throughout the United States

NEW YORK

PHILADELPHIA

ST. LOUIS

COMPARE YOUR PRICE LISTS

A CAREFUL STUDY

*Prac-
tically
85%
Of
Lilly
Products
Are
Subject
To
Best
Discount
40%
Through
Your
Jobber*

*Study
The
Parts
Of
Other
Lists
Subject
To
"Best"
Dis-
counts*

of our price list will show you that a very large percentage of your pharmaceutical requirements are subject to 40 per cent. discount without contract obligation, through your jobber. Net prices to all retailers on articles in PART II., which is relatively small, are on the same net basis as commonly given by competitors to their preferred customers who are under contract to buy a given quantity direct within a specified time.

IN VIEW OF THESE FACTS

does it seem wise to obligate yourself to buy a large amount of pharmaceuticals direct from the manufacturer within a definite period when such low and liberal terms can be secured at any time through your jobber by specifying Lilly?

COMPARE PRICE LISTS

STUDY your past purchases and see if Lilly specifications through your jobber will not help you to keep better stock, lower your liabilities and give you more cash at the end of the year.

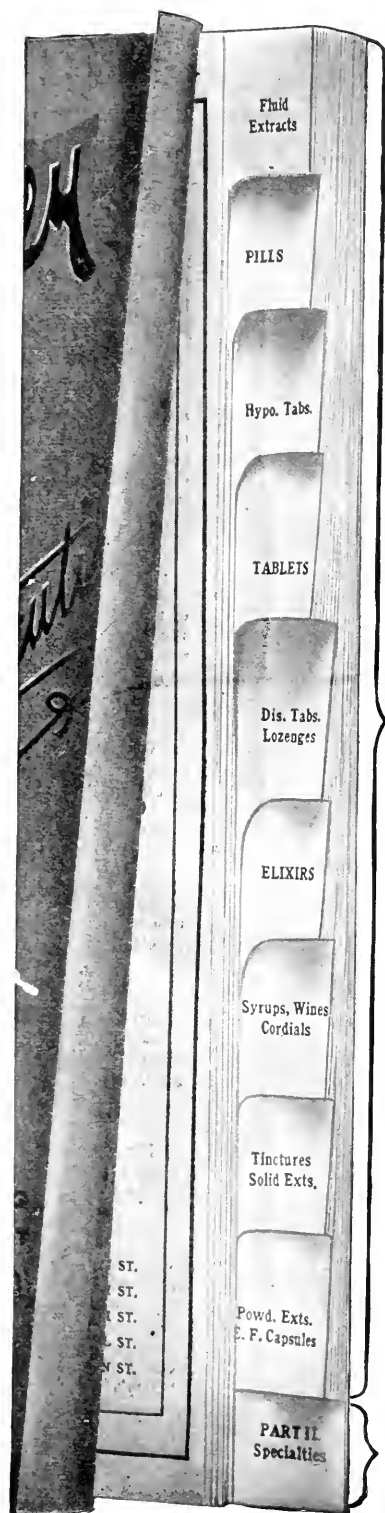
**YOUR JOBBER CARRIES THE
COMPLETE LILLY LINE :: ::**

ELI LILLY & CO.

INDIANAPOLIS
NEW YORK

CHICAGO
ST. LOUIS

KANSAS CITY
NEW ORLEANS



The cheapest book on Pharmacy because of the vast number of valuable items

FIFTH EDITION

Remington's PRACTICE OF PHARMACY

Based on the U. S. Pharmacopoeia (Eighth Edition)

By JOSEPH P. REMINGTON, Ph. M., Phar. D., F. C. S.

The latest Fifth Edition is having the largest sale of any issue ever published. This book is indispensable to the tyro, college student, drug clerk, proprietor or college professor. It is up-to-date. Throw away your used-up, torn, dog-eared, old edition and buy a new, clean copy of the Fifth Edition.

This treatise on the methods of making and dispensing official, unofficial, and extemporaneous preparations, with descriptions of their properties, uses, and doses, is intended as a hand-book for pharmacists and physicians and a text-book for students.

It aims to present those facts which should be of the greatest usefulness to the pharmacist and students in such a manner as to command attention without being so brief as to fail in its mission. Both metric and old form of weights are used for each formula, the type being different for each method, so that no confusion is created. This Fifth Edition has been thoroughly revised throughout.

It was awarded the Grand Prize at the Paris Exposition and judged "the best book on pharmacy in any language." It is a book for all—for the beginner, for home study, for the university or college student, for the lecturer as a text-book, for the manufacturer in the laboratory, for the practical pharmacist in every-day work, and is universally recommended by boards of pharmacy and college authorities throughout America.

Over 800 illustrations. 1541 pages. Large 8vo. Cloth, \$6.00; Sheep, \$6.50; Half Russia, \$7.00.

PUBLISHERS **J. B. LIPPINCOTT COMPANY** PHILADELPHIA

***The
Merrell
Idea***

**Keep up the Quality
Keep down the Price**

To specify Merrell on your orders is to grasp opportunity by the hand and profit by the Quality and Price Selling Plan introduced by the Merrell Company in 1912.

This pharmacal evolution means better values, increased profits, and improved business conditions for the retail druggist.

We cannot tell you all about it here, but if you examine our catalogue and compare our prices, you will not miss an opportunity to specify Merrell and insist on getting this high-class line at a saving of ten percent.



**The Wm. S. Merrell Chemical Company,
CINCINNATI.**

¶ Have you our 1912 Price Current?
If not, mail this coupon to secure a
copy and full explanation of our
Selling Plan.

Mail This Coupon
THE W. S. MERRELL CHEMICAL COMPANY, CINCINNATI, OHIO.
Please send your 1912 Price List and Selling Plan to

523

OUR SPECIALTY

QUALITY AND PRICE

¶ It is simply impossible to buy better Fire Insurance. We offer the very best. Reliability, safety and honesty are the foundation of our business.

¶ Our price is right. We save you 25 per cent in the cost of your fire insurance.

¶ A druggist who does not carry at least a part of his insurance with us, is making a mistake. Write, and we will prove it to you. We are drug store insurance specialists. A Capital Stock not a Mutual Company. Our Surplus for policyholders is nearly \$300,000.00. We have representatives in 31 states, and are under the supervision of 31 State Insurance Departments. We write insurance only on the property of retail druggists and only in fire protected towns.

ADDRESS

The American Druggists Fire Ins. Co.
1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

The Journal of the American Pharmaceutical Association

Volume I

AUGUST, 1912

No. 8

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

LAST CALL FOR THE DENVER CONVENTION.

BY the time this issue is in the hands of its readers, the final preparations of the local committee of arrangements will have been completed, and the stage set for the opening of the Sixtieth Convention, at Denver, August 19.

If any members are still hesitating in regard to attending, they should decide at once, and of course should decide affirmatively. No matter what his position or rank in pharmacy may be, the member who attends will have a better investment for his money than the one who stays at home and puts it in the bank.

You know how much you owe your jobber, and you are punctilious in paying him. How much do you owe yourself, and when do you expect to pay the bill? If you are an average druggist, the debt is a pretty big one and long overdue.

Your daily grind is more exacting and nerve-exhausting than that of the inmates of the state's penal institutions, and your limits of action nearly as confined. What are you getting out of life to compensate you for your self-imposed slavery?

Of course you will take a long rest some day—the undertaker will see to that—but why not take a partial rest now, and postpone the undertaker's intervention? Why not get some of the joy of living while you live? Why not see something of this big country of ours, the thriving cities of the central states, the broad prairies of the middle west, and the new civilization and enterprise of the Rocky Mountain region, the great backbone of the Continent?

Will it pay you in dollars and cents? Ask the men who have attended the

meetings year after year. These are the men who know, and their testimony is all on one side. They are not pharmaceutical misfits, but shrewd business men—regular money farmers in fact—who plant dollars to raise more dollars. Without exception they have found that it pays them to attend the annual meeting—pays not only in renewed physical and mental vigor, but in increased business and larger bank accounts.

The pharmacists of the country are coming to take a larger view of life and business, and of their relations to them. They are beginning to understand that the saving which keeps them from meeting with their fellow pharmacists and from learning what is being done elsewhere, is not economy but rank wastefulness—the wasting of an opportunity to invest money where it would return itself



YANKEE DOODLE LAKE.

More than 10,000 feet above the sea, and 60 miles from Denver.

many-fold. Such economy is rank penuriousness, or expressed in proverbial phrase, penny wisdom and pound foolishness.

The trip means a delightful vacation in very delightful company. It means coming in contact with the brainiest men in pharmacy, who have new and good ideas and know how to tell them, and have been gathering good things for a year for this meeting. It means a visit to some of the most interesting regions of the continent—regions you have always intended to visit some day, or if you have already been there, to visit again.

The man who would go, but is kept at home against his will, is unfortunate; the man who might go but does not, is foolish.

HOTELS AND RATES.

Brown Palace (official headquarters) Seventeenth and Tremont, 350 rooms, \$1.50 and up without bath; \$2.50 and up with bath. For two persons occupying room, \$2.50 and up without bath, and \$4.00 and up with bath.

Hotel Savoy, Hotel Shirley, Hotel Metropole, all opposite Brown Palace, and rates same.

Kaiserhof, 125 rooms, \$1.00 to \$2.50 without bath, \$1.50 to \$4.00 with bath.

DeSoto, 1848 Broadway, 80 rooms, \$1.00 to \$3.00.

Adams, Eighteenth and Welton, 150 rooms, \$1.00 to \$4.00.

Hotel Tremont, Seventeenth and Tremont, 54 rooms, \$1.50 to \$2.50.

Hotel Toovey, 3 East Twentieth avenue, 6 rooms, 75 cents to \$1.00.



DIXIE LAKE.

One mile beyond Yankee Doodle Lake, and 160 feet higher.

All of the above are on the European plan, and within easy walking distance of the official headquarters. Reservations can be made, either direct or through Local Secretary Charles M. Ford, 1236 Ogden street, Denver.

REPORT ON ROUTES AND RATES BY THE TRANSPORTATION COMMITTEE.

All who contemplate attending the Denver meeting of the American Pharmaceutical Association, which convenes on the afternoon of Monday August 19, should purchase regular round trip summer excursion tickets, as no special rate has been made from the East. Members must use the same route east of Buffalo going and coming, but may go by one route and return by another west of that



SNOWBALLS IN AUGUST.
On the top of the world, 60 miles from Denver.



THE SUMMIT OF THE CONTINENTAL DIVIDE.
11,600 feet above sea level, and 64 miles from Denver. Within this distance the train has climbed one mile twelve hundred and ten feet.

point. The routes both ways must be specified when purchasing tickets. Tickets will be good until October 31 and holders may stop over, on due notice, either going or coming.

Tickets may be purchased to Colorado Springs for the same price as to Denver, with stop-over privilege at the latter point.

The members should decide before leaving for Denver whether or not they wish to take in the Salt Lake or the Yellowstone Park trip, since the tickets for these additional trips will cost less if purchased in the East than if bought at Denver.

The following routes are recommended by the committee: Members should consult the nearest member of the committee regarding local routes and time of departure of trains.

Friday, August 16, leave Boston (B. & A.), at 11:30 a. m., leave Albany (N. Y. C.) 5:15 p. m., leave Philadelphia (Lehigh Valley) 12:30 noon, leave New York (Lehigh Valley) 12:05, noon, leave Buffalo (Grand Trunk) 10:55 p. m.

Saturday, August 17, arrive Chicago (L. S. & M. S.) 12:50 p. m. (Grand Trunk) 2 p. m. Leave Chicago (Chicago, Burlington & Quincy) 5 p. m.

Sunday, August 18, arrive Denver 7:30 p. m. Round trip.

The round trip fare by the routes indicated are given below:

RAILROAD FARE FOR ROUND TRIP TO DENVER.

	To Denver only	Including Salt Lake City	Including Yellow- stone	Including San Francisco
Boston	\$70.80	\$83.80	\$131.80	\$113.30
New York.....	64.30	76.30	131.80	111.80
Baltimore	62.80	75.80	123.55	105.30
Philadelphia	65.55	78.55	126.30	108.05
Chicago	30.00	43.00	98.50	72.50
St. Louis.....	25.00	38.00	93.50	70.00
San Francisco.....	55.00	.....	.....	.....

The sleeper fare for the round trip will be \$22 from New York, \$12 from Chicago, and \$11 from St. Louis, with a discount of 20 per cent on upper berths.

For further information members should consult the nearest member of the Transportation Committee, which is as follows:

Atlanta, Ga.—W. S. Elkin, Jr., Peachtree and Marietta Streets.

Baltimore, Md.—Chas. Caspari, Jr., University of Maryland.

Boston, Mass.—C. Herbert Packard, 7 Central Square.

Chicago, Ill.—Wilhelm Bodemann, Hyde Park.

Cincinnati, O.—Charles G. Merrell, Fifth and Butler Streets.

Cleveland, O.—L. C. Hopp, 1104 Euclid Avenue.

Denver, Col.—W. A. Hover, 1437 Lawrence Street.

Minneapolis, Minn.—F. J. Wulling, Minnesota University.

San Francisco, Cal.—Charles W. Whilden, 1727 Pine Street.

St. Louis, Mo.—H. M. Whelpley, 2342 Albion Place.

New York, N. Y.—Caswell A. Mayo, 66 West Broadway, *Chairman*.

ASSOCIATION TEAM WORK.

LIKE the evils of Gadarene nativity, the evils which afflict pharmacy are legion. Sunday work and too many hours of labor on secular days, price cutting and physicians' dispensing, inefficient and insufficient help, fake patent medicines and over-priced proprietaries, cocaine and liquor selling in drug stores, the common indifference of the mass of druggists to association work, educational and legislative problems—these are only a few of the questions with which the pharmaceutical associations must struggle, and as a consequence they have usually been tempted to spread their efforts over too wide a field and to expend their energies upon too great a range of subjects.

This diffusion of energy and consequent loss of effectiveness is true not only as regards the efforts of the individual societies, but is reflected in the failure of the different societies to act in concert with each other.

As far as the writer has been able to observe, the A. Ph. A. and the N. A. R. D. are in substantial agreement upon all the great questions which confront pharmacy, but to date there has been a conspicuous lack of "team work" in their efforts to solve these questions. One year the A. Ph. A. makes a special feature of some particular professional or trade evil, and perhaps deals some effective blows upon it, while the N. A. R. D. belabors with equal lustiness some other evil, but it is generally by accident that they both attack the same problem at the same time.

This lack of coordinated effort between these two great national bodies fairly illustrates the relations of the numerous state and local pharmaceutical societies to each other—they profess to be and, in fact, are in sympathy with each other, but they do not pull together, and consequently fail to realize the full effect of collective effort.

That the various organizations have accomplished a vast amount of good in all the lines of work they have attempted will not be disputed by any candid and unprejudiced observer, but their energies have been so widely diffused in time and space that they have not made the decided impression that would have been made by more concentrated and better directed effort.

In an important sense, perhaps, this general work has not been wasted; it has been a necessary antecedent to the work which is to follow. It has cleared away the tangle of trivialities that obscured the field and has brought the real and vital issues squarely into view; it has developed intelligent sentiment and a common understanding upon a variety of subjects, and has replaced erroneous and hazy ideas by correct and distinct ones. It has been the preliminary skirmishing that has uncovered the nature of the difficulties that must be overcome and has exposed the points upon which the real attacks should be delivered.

It is time now, however, when pharmaceutical organizations should begin to "bunch their hits," and replace their separate efforts by "team work," to stop irregular sniping and try the effect of firing by volleys.

THE JOURNAL suggests that at their respective meetings this month the A. Ph. A. and N. A. R. D. select a list of subjects upon which they will cooperate during the next twelvemonth, and that they invite every state and local organization of pharmacists and every individual pharmacist in the country to help carry this joint program to a successful issue.

J. H. BEAL.

SHORTER HOURS AND SUNDAY REST.

FOR years this question has been the subject of debate and resolution with the A. Ph. A. and N. A. R. D., and probably with the majority of state associations, and except that here and there the pharmacists of some of the smaller communities have adopted better hours, and that a few individual pharmacists have emancipated themselves by independent action, nothing effectual has been accomplished.

The subject is referred to here, not with the object of adding anything to what has already been said upon it, but partly for the purpose of calling attention to an excellent collection of papers upon this topic printed in *N. A. R. D. Notes* of June 20, and partly to suggest that Shorter Hours and Sunday Rest would be a very appropriate subject for concerted action by all pharmaceutical bodies during the coming year—and for as many years afterward as may be necessary to accomplish this greatly needed reform.

With but few exceptions the pharmacists who have expressed themselves upon this topic have declared that drug stores everywhere may be closed, either for the whole or for the larger part of each Sunday, without detriment to the community, and without material loss to their proprietors, and that such small financial loss as may occur is more than compensated by the increased physical well being and mental reinforcement of the proprietor and his assistants.

The men who thus speak are not pharmaceutical derelicts, but men who have been successful in business to an eminent degree, and who speak out of the fullness of experience, and there are no others better able to speak with authority.

Practically all of them are emphatic in asserting that the need of supplying medical articles does not require stores to be open all day on Sunday, and they are equally emphatic in asserting that where such a practice obtains mercenary motives are alone responsible.

In fact the evidence in favor of complete or partial Sunday closing is so voluminous, so pointed and so clear, that no court or jury to which it was submitted would fail to find in favor of it.

Of the plans suggested for Sunday closing two seem to have been most successful where tried:

To close all but one or two stores in a town or neighborhood, the closed stores having in their windows the names of the ones open on that day, the stores to remain open being selected in regular rotation.

To close all of the stores every Sunday, except for two or three hours in the morning and evening.

Both of these plans require concert of action for their successful operation, but some assert that the pharmacist who is brave enough to do so can close his own store either for the whole or part of the day without regard to what others in the same community or neighborhood may do, and instance their own experience as evidence that this independent action may be taken without loss, or that the loss will be more than made up by increased trade on week days.

That the cruelly long hours of the pharmacist are responsible for many other pharmaceutical evils there is not the slightest particle of doubt, and it is morally certain that longer and more frequent periods of rest would result in such a broadening of the pharmacist's outlook upon life, and would have such a clarifying

effect upon his understanding as would enable him to better comprehend other proposed reforms and induce him to contribute his efforts for their accomplishment.

J. H. BEAL.



THE CERTIFICATION OF PHARMACIES.

CLASSIFICATION for the purpose of indicating superiority or excellence has been adopted in a good many callings.

In the eternal struggle for existence it has often come to pass that "caveat emptor" has assumed a meaning far beyond that originally intended by the law. It is often a case of "the buyer had better look out or he is sure to get stung."

While a good many business men and a still greater number of those engaged in professional pursuits have long ago recognized the fact that the buyer is entitled to a great deal of consideration, and that the very fact of his patronage is an expression of confidence which should be guarded as a precious jewel, there will always be men who are ready to sacrifice honor, and even life, for the sake of paltry gain. And while eventually such tactics are bound to result in failure, still the innocent purchaser and the honest seller are of necessity the sufferers under such conditions.

Some things are so familiar to the public at large that a little reasonable care in their selection will enable the purchaser to "beware;" others are of such a character that nothing short of special training will enable one to separate the good from the bad, and it is especially in goods which are of the utmost importance for the maintenance of health and the combating of disease that the latter applies.

Recognizing these conditions the makers of delicate instruments have long ago resorted to special methods of testing, and instruments so tested are "certified," thus giving the purchaser an additional assurance of accuracy. The modern business doctor, the accountant, appeals to his prospective patrons by being "certified." Infant mortality, the cause of which went unrecognized for an almost criminally long time, has been greatly reduced by the knowledge that the infant's staff of life must be pure, and today milk inspection and the "certification" of dairies complying with certain requirements laid down by the milk commission are cutting down death and disease among infants in perceptible amount.

What holds good in other lines of business and in other professions surely may successfully be applied to one of the most important callings of modern civilized life, pharmacy. Even in Galen's time there were complaints of the substituting and irresponsible pharmacist, and the trend of time has not been able to completely eliminate that blot on the pharmaceutical profession, the unreliable druggist. There seems to be no adequate reason then why the pharmacist who carefully and conscientiously follows his professional calling, who is specially equipped, both educationally and with laboratory facilities, should not be distinguished from his less well prepared or less willing brother by having his store certified.

As to the requirements which a store must meet in order to become certified, careful thought should be given to this subject and rules must be laid down which, while not prohibitive, will make reasonably sure of the fitness both of the pharmacist and his pharmacy before certification is granted.

No pharmacy should be admitted to certification which is not owned and act-

ually managed by a duly registered pharmacist. A certain amount of equipment, a fair minimum of paraphernalia, should be found in the store, and this should include also a reasonable reference library. Counter-prescribing should be an absolute disqualifying agent, as well as any attempt at substitution or sophistication in the compounding of physicians' prescriptions. And lastly I would consider any pharmacy unfit for certification which sells liquors in any shape or form for beverage purposes.

The officers charged with the appointing of the committees which are to grant these certificates have a duty to perform which must not be underestimated. The power vested in such a committee, for good or for evil, is far reaching, and only such men should receive an appointment thereon who have no private enterprises to foster; nor should men be appointed whose only claim to recognition is the political power which they hold in their local, state or national association. They should be men who, without fear and without favor, will grant a certification to their bitterest enemy, should he be worthy, and will refuse such certification to their best friend, should he fail to meet the necessary requirements.

There are plenty of men in pharmacy who are fully able to perform this duty, who will give their time and labor without remuneration, for the benefit of humanity and of their calling. Again there are men who will make every effort to receive an appointment on this committee whose own stores could not conscientiously be certified.

A serious duty is thus imposed on the Chairman of the Medical Society of the County of New York and on the Chairman of the New York Branch A. Ph. A. The entire nation will be watching the makeup and the work of this committee. It is the first and greatest opportunity which pharmacy has to prove its fitness to be enrolled as a true profession. Will we utilize this opportunity, or will we again permit the pharmaceutical politicians to barter away our birthright?

J. DINER.



"DRUGGISTS ARE MEN OF NO GREAT LEARNING."

IN the recent decision in the noted "broken senna" case in the United States District Court for the Southern District of New York, Judge Hand said, among other things: "The Pharmacopoeia is a book put in the hands of druggists all over the country, *men of no great learning*, for practical use," or, putting the statement in affirmative form, that pharmacists as a class are men of very little learning.

Such a statement from a learned Judge of a Federal Court should not be allowed to pass by unanswered.

In our opinion the pharmacists of the United States who take an interest in pharmacy as a profession, and who are members of the American Pharmaceutical Association, *are men of very considerable learning*, and therefore do not deserve this criticism of the Federal Judge. It has often been said, and said truly, that the American Pharmaceutical Association in its annual conventions, in the monthly meetings of the Branches, and in its publications, as the Journal, Proceedings, Committee Reports, National Formulary, etc., provides a real post-graduate course of pharmacy. In order to be a graduate of a college of pharmacy, higher

education is demanded, and in order to pass the State Board examination in most of the states it is practically necessary to be a college graduate.

The writer well remembers that not many years ago the youth in a law office would go to an evening law school, where no "regent's counts" were required, take the state board examination and was then admitted to the bar. And this was the manner in which a great many lawyers who are now judges obtained their education, while thousands of practicing lawyers never saw the inside of a law school of any kind.

We are unable to agree with the learned judge that pharmacists as a class are men of no great learning, and believe that his dictum does a great injustice to a class of men who are equally as well educated as those who practice law, though perhaps not so much given to the parading of their learning in public places.

OTTO RAUBENHEIMER.

SIMPLER PHRASEOLOGY.

It is with rejoicing that one notes the tendency toward simpler language and phraseology in recent scientific literature. It is to be regretted that some of the texts and treatises on medical and surgical subjects show a less noticeable degree of improvement than do scientific periodicals and research publications. Probably there was a time when the use of cumbersome and sonorous phrases lent a sort of dignity to medical literature, particularly in the estimation of the general public. Recently, however, many writers are acting on the theory that no need exists for borrowing dignity from so doubtful a source, and that the simpler the language, the more accurately and readily it will convey the intended meaning. Some medical authors find occasions when "cause" expresses their meaning as well as "etiological factor," and when it is as easy to have the patient "lie down" as to make him "assume a recumbent posture." We welcome the time when any work which defines a fracture as "a traumatic or pathological solution of the continuity of osseous structure," or abounds in verbiage equally atrocious, will be preserved and read only as a curiosity.—*Journal A. M. A.*

Book Reviews

DIGEST OF COMMENTS ON THE PHARMACOPOEIA OF THE UNITED STATES OF AMERICA (Eighth Decennial Revision) AND ON THE NATIONAL FORMULARY (Third Edition) FOR THE CALENDAR YEAR ENDING DECEMBER 31, 1910. By Murray Galt Motter and Martin I. Wilbert. Washington, Government Printing Office, 1912. Hygienic Laboratory, Bulletin No. 84. Public Health and Marine Hospital Service of the United States.

Only a few months have elapsed since Bulletin No. 78, containing the "Digest of Comments" for 1909 has been published, a review of which was given in *THE JOURNAL A. Ph. A.*, May, pp. 405-408, from the standpoint of the food and drug chemist, of the teacher and scientist, and of the retail pharmacist.

The present volume, the sixth of the series of "Digests," was published in May, 1912, and on 784 pages contains the comments on U. S. P. VIII and N. F. III, including also the comments immediately preceding and following the U. S. P. Convention in Washington, May 10, 1910. The arrangement of the book is an excellent one, as has already been described in a review of the "Digest" for 1909 on page 407 of the May number of *THE JOURNAL A. Ph. A.* The writer might be permitted to point out that under Nonpharmacopœial Standards the proposed "Recipe Book" of the A. Ph. A. is mentioned in title as well as in three comments on page 113.

In the list of Pharmacopœias and Nonofficial Standards, on page 19, we find that the British Pharmaceutical Codex, London, 1911, is given. Inasmuch as the "Digest" is for the year 1910 and inasmuch as the second edition of the B. P. Cx. was not published until October, 1911, we are of the opinion that the first edition, 1907, is the one which should have been referred to. We also notice that the preface of the "Digest" mentions the second edition of the Greek Pharmacopœia, which work, however, is not mentioned under the "title abbreviations" on page 19. Strictly speaking there is no such work, as the excellent dispensatory or "Pharmakopolia," by Prof. A. K. Dambergis, of Athens, has taken its place and has been made official. The writer, who happened to have the second edition, published in 1910, in his library had occasion to mention this in the symposium on the pharmacopœias of the world, held at the Richmond meeting of the A. Ph. A. (Proc., Vol. 58, p. 1135.)

The compilers of the "Digest," Messrs. Motter and Wilbert, are not responsible for the spelling of the word "sirup" in place of the pharmacopœial title "syrup," the former being given by Webster's International Dictionary, which governs the style of the Government Printing Office. Is this also true of the word "niter," instead of "nitre," in "sweet spirit of niter," which occurs several times on page 723?

It will undoubtedly be of interest to chemists and pharmacists, who are actively engaged in clinical laboratory investigations, to learn that the chapter on

"Clinical tests" occupies 20 pages and deals with urine, faeces, gastric contents, blood, sputum, stains, culture media, biologic methods and Wassermann reaction.

The compilers, as well as the Hygienic Laboratory, are to be complimented on the series of "Digests" which throw so much light on pharmaceutical problems. These publications have become indispensable to teacher and scientist, to analytical and manufacturing chemist, and to wholesale and quite especially to retail pharmacists.

We would therefore advise the members of the A. Ph. A. to procure a copy of Bulletin No. 84 and not only give same a place in their library, but to make frequent use of the book, which is a true digest of comments on pharmaceutical problems during 1910.

OTTO RAUBENHEIMER.

VACATION TIME.

More than almost any other class of business men the druggist seems to think that he cannot get away to take a vacation. There is no exception to the rule that all men need a vacation every year and that all will do more and better work fifty weeks in a year than fifty-two. In all probability the average man would do more work if he worked but eleven months a year than he does working twelve. The vacation that is omitted this year may not bring its corresponding reduction in working value at once. It may not result in any diminution of capacity this year, or even next. But it is certain that any engine, human or mechanical, that is run year in and year out without stopping for repairs, will not last anywhere near as long or do anything like the total amount of work that it would do if properly cared for. We believe that there are among our readers not more than a negligible number who would not be better off the first of next January if they were to take two weeks or a month now to recuperate. A man does not waste time when he spends it in a vacation. Beside the value of the change itself, he comes in contact with new forces, with new people and he gets new ideas and new impressions. He goes away with a feeling that his business is a hard uphill fight. He comes back filled with new plans and methods and with the energy to carry them out.—*American Druggist*.

Contributed and Selected

COMPARATIVE ALKALOIDAL STRENGTH OF HYDRASTIS' ROOTLETS AND RHIZOME.*

CHARLES H. LA WALL.

Some time ago a client called me up on the telephone and asked which contained the greatest amount of alkaloids, the rhizome or rootlets of hydrastis. I told him that I did not know but would try and find out. I could find neither any reference in literature bearing on the subject nor could I find anybody else who could answer the question among about a dozen chemists whom I consulted.

My client then submitted samples and data which form the basis for this short contribution.

A lot of hydrastis weighing 98 pounds net was seen to consist of such a large proportion of rhizomes that it was deemed advisable to make a complete separation and separate assays for guidance in future purchases. Upon cleaning the drug and separating the rootlets from the rhizomes the following fractions were obtained:

Rhizomes	45 1/2 lbs.
Rootlets	48 lbs.
Dirt and dust.....	3 5/16 lbs.
Loss in cleaning (unaccounted for).....	1 3/16 lbs.
Total	98 lbs.

Of the 93½ pounds of hydrastis 48.66% was rhizomes and 51.34% was rootlets. Upon assaying these separately the rhizomes were found to assay 2.48%, while the rootlets were found to assay only 1.38% of hydrastine. The total assay of the mixed drug in its original condition, from these figures, must have been 1.92%, which is slightly lower than the U. S. P. standard drug.

The answer to the original question, however, is that hydrastis rhizomes are between 1.5 and 2 times as rich in alkaloids as the rootlets.

A NEW AND RELIABLE METHOD FOR THE PRESERVATION OF ERGOT PREPARATIONS.*

PAUL S. PITTENGER AND CHAS. E. VANDERKLEED.

The deterioration of ergot preparations has for several years occupied the attention of various investigators, but until the present no one has succeeded in devising a method by which these preparations can be put on the market in a form

*Read before the Pennsylvania Pharmaceutical Association, June, 1912.

which will remain stable for a considerable length of time. So serious a problem had the deterioration of these products become, that it was deemed advisable that the actual date of test be made to appear on all ergot preparations in order that pharmacists and physicians might be enabled to use their expert judgment as to whether or not any particular product should be employed.

Without question, heat and access of oxygen of the air are the most potent factors in facilitating the deterioration of ergot, but the continued examination of many samples led us to believe the access of air to be the most important cause of deterioration. It has been known for some time that well filled, tightly stoppered containers of fluidextract of ergot will retain their activity for a much longer period of time than containers which are opened from time to time.

Accordingly, on May 2, 1911, the following experiments with fluidextract of ergot were undertaken to determine the value of complete exclusion of air.

A fluidextract was taken which, when intravenously injected in doses of 0.08 cc. per kilo weight gave the following result in changing blood-pressure:

Table No. 1.

	Dog No. 1.			Dog No. 2.		
Injection.	No. 1.	No. 2.	No. 3	No. 4.	No. 5.	Average.
	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.
Immediate rise.....	48	44	28	68	36	48.8
Fall	10	30	46	4	24	22.8
Rise after 5 Min.....	38	22	30	38	8	25.2
Rise after 10 Min	34	20	18	30	8	22.0
Rise after 15 Min.....	31	20	14	26	4	19.0

When assayed for total alkaloids by the process of Keller, on May 26, 1911, 0.163% was obtained.

This fluid extract was then divided into four portions which were kept for one year in the laboratory in the following manner:

A—The first portion was put up in vacuum tubes specially designed and made for this purpose.

B—The second portion was filled into bottles which were tightly corked and allowed to remain for one year, unopened.

C—The third portion was filled into bottles which were kept loosely corked for one year, this being obtained by boring a small hole in the cork.

D—The fourth portion was tightly corked but opened occasionally throughout the year.

After three months a test was made of part of the fourth portion (D) which showed a deterioration of 33.3% as shown by Table No. 2.

Injection.	0.08 cc. per kilo.
Immediate rise	30 m.m.
Fall	24 m.m.
Fall after 5 min.....	—10 m.m.
Fall after 10 min.....	—13 m.m.

A second test was made of this portion at the end of nine months, when it was found to possess only 44 2/6% of the original activity or to show a deterioration of 55 1/2%, as shown by Table 3:

Injection.	No. 1.	No. 2.	Average.
Immediate rise.....	20 m.m.	20 m.m.	20 m.m.
Fall	34 m.m.	30 m.m.	32 m.m.
Fall after 5 min.....	-16 m.m.	-13 m.m.	-14.5 m.m.
Fall after 10 min.....	-12 m.m.	-12 m.m.	-12 m.m.
Fall after 15 min.....	-8 m.m.	-10 m.m.	-9 m.m.

At the end of a year all four portions were tested with the following results:

Table No. 4.

A—First portion put up in vacuum tubes.

	Dog No. 1			Dog No. 2		Dog No. 3	Dog No. 4	Dog No. 5	Dog No. 6	
Injection	No. 1	No. 2	No. 3	No. 4	No. 5	No. 6	No. 7	No. 8	No. 9	Aver.
	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.
Immediate rise.....	44	52	40	54	52	44	44	53	54	49.1
Fall	7	18	12	30	12	0	0	0	0	8.7
Rise after 5 min.....	5	32	20		2	19	0	24	16	13.8
Rise or fall after 10 min.	-2	18		-5	2	4	-3	18	3	4.4
Rise or fall after 15 min.	-2	18		2	1	4	-6	12	-4	3.1

When assayed for total alkaloid by the process of Keller, on May 6, 1912—0.168% was obtained.

Table No. 5.

B—Second portion, tightly corked, unopened.

Injection	Dog No. 1		Dog No. 2	Dog No. 3		Average
	No. 1	No. 2		No. 4	No. 5	
	m.m.	m.m.	m.m.	m.m.	m.m.	m.m.
Immediate rise	44	28	26	28	23	29.3
Fall	32	22	0	0	6	12.0
Rise after 5 min.....	0	2	7	10	2	4.2
Rise after 10 min.....	14	0	1.5	4	0	3.9
Rise or fall after 15 min.....	14	0	-1.	2.	0	3.0

Table No. 6.

C—Third portion loosely corked.

Injection	Dog No. 1		Dog No. 2		Average
	No. 1	No. 2	No. 3	No. 4	
	m.m.	m.m.	m.m.	m.m.	m.m.
Immediate rise	24	18	6	18	16.5
Fall	38	52	24	24	34.5
Rise or fall after 5 min.....	2	-8	-4	-3	-4.5
Rise or fall after 10 min.....	3	-4	-3	-4	-2.0
Rise or fall after 15 min.....	7	-1	-2	-4	0.0

Table No. 7.
D—Fourth portion, tightly corked, opened occasionally.

Injection	Dog No. 1	Dog No. 2		Average
	No. 1 m.m.	No. 2 m.m.	No. 3 m.m.	
Immediate rise	12.	10.	23.	15.
Fall	54.	40.	26.	40.
Fall after 5 min.....	—4.	0.	—18.	—7.3
Fall after 10 min.....	—6.	—1.	0	—2.3
Fall after 15 min.....	—6.	—2.	0	—2.7

When assayed for total alkaloid by the process of Keller, on May 6, 1912—0.076% was obtained.

SUMMARY.

Table No. 8

How Kept	Date tested	No. of injections	Aver. rise of blood-pressure	Chemical assay for total alkaloid
Original sample	5-26-11	5	44.8 m.m.	0.163%
D—Tightly corked (3 months), opened occasionally	8-24-11	1	30.0 m.m.	
D—Tightly corked (9 months), opened occasionally	2-29-12	2	20.0 m.m.	
A—In <i>vacuum</i> (1 year old).....	5- 9-12	9	49.1 m.m.	0.168%
B—Tightly corked (1 year old)....	5- 9-12	5	29.8 m.m.	
C—Loosely corked (1 year old)....	5- 9-12			
D—Tightly corked (1 year old), opened occasionally	5- 9-12	4	16.5 m.m.	
		3	15.0 m.m.	0.076%

The apparent extreme variations in the rises recorded in the different animals are due to both the difference in the susceptibility of the dogs and to the difference in the order of injection of samples. In order to obtain the true relative strengths of the preparations the order of injection was reversed in succeeding animals until each preparation had been given to each of several dogs and the results based on the analysis of the several injections.

It may thus be seen that by adopting the *vacuum* method of putting up ergot the rate of deterioration can be so retarded as to make this product one of stable quality for a considerable length of time.

We have already taken steps to apply the same method of preservation to the preparation of other drugs somewhat prone to deterioration, such as digitalis and strophanthus.

PHYSIOLOGICAL LABORATORY OF H. K. MULFORD COMPANY.

THE REVISION OF THE UNITED STATES PHARMACOPOEIA.*

JOSEPH P. REMINGTON, CHAIRMAN.

The work of preparing the Ninth Revision is proceeding rapidly. The new plan, which differs essentially from all previous methods, while involving more

*Read before the Section on Pharmacology and Therapeutics of the American Medical Association.

labor and consuming more time than any other revision, has justified the wisdom of the convention in adopting the present method, which consists mainly in increasing the number of the members of the General Committee of Revision from twenty-six to fifty, but more especially in creating an Executive Committee of fifteen from this number to prepare a complete report which will finally be approved by the General Committee. Inasmuch as almost the whole work is conducted by correspondence, the voting on the reports which consumes the greatest amount of time is now limited to fifteen members instead of fifty. Each of the members of the General Committee of Revision occupies a place on one or more of the sub-committees, he being given his choice of the particular part of the work which he prefers, the actual appointment, however, having been made by the Chairman of the General Committee, who has charge of the immediate revision of the work.

The plan does not differ from the usual method of doing constructive work in which much detail is involved. A large body, interested in drugs, medicines and preparations, is organized, representing all parts of the country. From this body is first elected a convention, which meets once in ten years; this convention, consisting of about four hundred representatives, elects a committee of fifty, termed the General Committee of Revision; they elect a smaller body of fifteen, called the Executive Committee. The Executive Committee, having fifteen subjects, embracing all of the Pharmacopoeia work, is composed of the chairmen of fifteen sub-committees. The sub-committees work under their chairmen upon the subjects for which they are best fitted. By this plan it is hoped that every valuable suggestion in the work of Revision will find its way from an individual member first to the sub-committee having the subject in charge, then through the Executive Committee, through its report, then to the General Committee, Editor and General Chairman, before it reaches the printer. Considerable time had to be spent effecting a complete organization and at this time the most difficult part of the work is under way.

The following table shows the state of the work in detail:

SUB-COMMITTEE BULLETINS.		Pages
No. 1—Scope		288
No. 2—Therapeutics, etc.		103
No. 3—Biological Products, etc.....		80
No. 4—Botany and Pharmacognosy.....		212
No. 5—Inorganic Chemistry		408
No. 6—Organic Chemistry		659
No. 7—Proximate Assays		202
No. 8—Volatile Oils		34
No. 9—Fluid and Solid Extracts.....		202
No. 10—Waters and Spirits.....		139
No. 11—Syrups and Elixirs.....		258
No. 12—Cerates and Ointments.....		41
No. 13—Miscellaneous Galenicals		121
No. 14—Tables, Weights, and Measures.....		75
General Committee Circulars.....		...
No. 15—Nomenclature		1119
Executive Committee Letters.....		588

Total 4529

The text has been reported in full to the Executive Committee for 288 articles.

The pages of official circulars, letters and bulletins are given. The circular page is 9 x 16 inches and the official letters and bulletins 8½ x 11 inches. Each circular and letter is numbered and paged consecutively and temporary binders are furnished to each member, these, in turn, being transferred to permanent binders, to be placed upon a book-shelf when 500 pages are completed, constituting Volumes I, II and III, etc. This is necessary because constant reference to preceding pages is required for study. The large pages are used for communications for the General Committee of Revision and are termed Circulars. The smaller pages are used for Executive Committee work, being numbered and paged consecutively, and are termed Letters. The term "Bulletin" is used to designate the letters which pass between the sub-committee members for official comment and record. Communications from firms, corporations, physicians, pharmacists, scientific bodies and the public generally and the replies thereto are not included in the summary, although they constitute a large amount of correspondence.

Naturally, it has consumed considerable time to effect a system for controlling the detail, but when once established, the routine is easily followed. It may be of interest to the American Medical Association to have some detailed information as to the immediate progress of the work.

Sub-committee No. 1, on the Scope of the Pharmacopoeia, has practically finished its labors. The sub-committee consists of nine (six physicians, one manufacturing pharmacist, one importer of drugs and one medical doctor, who is a pharmacognocist). It was the duty of the sub-committee to propose the list of Admissions and Deletions, for, while the other members of sub-committees could employ their time in arranging general subjects pertaining to the classes of preparations of which they have charge, it was necessary to hold up detailed work on these until each sub-committee knew what drugs and preparations they had to work on. Delay was obviated through requesting the sub-committee on Scope to send a report including such well-known and largely used subjects as quinine, opium, rhubarb, digitalis, belladonna, etc., which were approved by every one on the Sub-committee on Scope as admissions. This enabled the sub-committees to begin work at once. Subsequently the Sub-committee on Scope presented a tentative report embracing the full list, as far as possible of articles recommended for admission and deletion. The list, after being approved, was sent for publication to the journals last August. This does not mean that before the book is printed some changes may not be made in the list. A few manifest discrepancies, not exceeding ten, were noticed in this tentative list, but they were corrected at once.

Sub-committee No. 2 (Therapeutics and Pharmacodynamics) has been actively engaged in preparing a list of doses, and a posological table has been submitted, which will soon be ready to report to the Executive Committee. The sub-committee has further contributed valuable information on other subjects.

Sub-committee No. 3 (Biological Products, Diagnostical Tests, etc.). This sub-committee has taken up animal substances, and a number of experiments have been made to determine reliable data, and the report will soon be ready for the Executive Committee.

Sub-committee No. 4 (Botany and Pharmacognosy). Progress is being made in this sub-committee and a great deal of careful scientific work will come within their domain. The number of workers in the botany and pharmacognosy of medicinal drugs is limited and there are many problems, particularly concerning the origin and identity of plants, that remain unsolved.

The new Pharmacopoeia can not possibly be delayed until every question is settled, but time is required to present the most reliable information to be had. A pharmacopoeia can do no more than present the most reliable and accurate information obtainable. Fortunately, the drugs of doubtful origin or identity constitute the minority. A great deal of correspondence has passed between the members of this sub-committee.

Sub-committee No. 5 (General and Inorganic Chemistry). The sub-committee has accomplished much work. It has one of the largest subjects in the Revision. The first report to the Executive Committee will be completed in a few weeks. A uniform method of taking physical constants, particularly solubilities, has not yet been adopted. These will be inserted after the factors have been determined by actual experiment.

Sub-committee No. 6 (Organic Chemistry). The work of this sub-committee is in a forward state. The condition which exists here is the same as of the previous sub-committee. The Executive Committee is in possession of the bulk of the report without the insertion of the physical constants.

Sub-committee No. 7 (Proximate Assays). The report of this sub-committee will soon be sent to the Executive Committee. Inasmuch as this work has no interdependence on other sub-committee work, it was deemed best to wait until the report was completed before submitting it to the Executive Committee. It is nearly finished.

Sub-committee No. 8 (Volatile Oils). The chairman of this sub-committee has submitted a tentative report on volatile oils to the sub-committee and it is now being considered. The finished report is expected to soon be laid before the Executive Committee.

Sub-committee No. 9 (Fluid and Solid Extracts and Tinctures). A great deal of work has been done on this subject and much has been written in the journals. Evidence is being sifted and, if required, a report could be sent at once upon the greater number of preparations. A few require further tests before adoption. Type samples for the 1880, 1890 and 1900 Pharmacopoeias are in the possession of the Chairman to determine the keeping qualities of fluidextracts and tinctures.

Sub-committee No. 11 (Syrups and Elixirs), No. 12 (Cerates and Ointments), No. 13 (Miscellaneous Galenicals). With a few exceptions, reports can be made upon these subjects within two months.

Sub-committee No. 14 (Tables, Weights and Measures). A number of tables are ready for report; the standard temperature for use in determining solubilities, specific gravities, etc., have been taken up by the sub-committee, and the chairman has labored indefatigably, but the work requires continual calculation and study; but there is no likelihood that the Executive Committee will be embarrassed on its account when the time comes to need it, because of needless delay.

Sub-committee No. 15 (Nomenclature). This sub-committee has sent a preliminary report to the Executive Committee. When the principles of nomenclature

have been settled, the work will not be likely to cause much discussion as far as the Chairman is able to judge. The convention settled the question, very largely, of the nomenclature of the new Pharmacopoeia. The recommendation was as follows:

"We recommend that changes in the titles of articles at present official be made only for the purpose of insuring greater accuracy, brevity, or safety in dispensing, and to eliminate therapeutically suggestive titles. In the case of newly admitted articles, it is recommended that such titles be chosen as are in harmony with general usage and convenient for prescribing, but in the case of chemicals of a definite composition the scientific name should be given at least as a synonym.

"There should also be inserted, after each article used by physicians in prescriptions, a carefully considered, abbreviated name, which may be known as an official abbreviation, in order that uniformity may be established throughout the country, with the object of preventing mistakes in reading and compounding prescriptions, and further, to serve as authorized abbreviations in labeling the store furniture of the pharmacist."

This sub-committee has always reported in previous revisions after the other sub-committees have sent their reports and the admissions and deletions have been finally determined.

It is not surprising in Pharmacopoeia work to hear criticisms in certain quarters asking definite information and date for the appearance of the new book. While every effort should be made persistently and continuously to push the work, great patience is required in order that hasty conclusions or incorrect guesses be eliminated. At present, thousands of interested observers throughout the country where there were hundreds before will scrutinize the pages with the utmost care and with very good reason, for the Food and Drugs Act decisions are based upon the standards of the United States Pharmacopoeia, and it is only by continual vigilance that errors may be eliminated and that a work involving so much responsibility can be successfully produced.

Now is the time to send the Chairman suggestions, criticisms and comments in order that they may be thoroughly considered.

COOPERATIVE WORK ON A UNIFORM METHOD FOR ALCOHOL DETERMINATIONS.*

L. HENRY BERNEGAU.

At one of our last meetings in 1910 a discussion arose in regard to determining the percentage of alcohol in products and preparations such as Wines, Elixirs, Fluidextracts, etc. At this meeting I stated that the percentage of alcohol determined in a certain N. F. preparation by different chemists varied about 3 per cent. The samples of said preparation were assayed for alcohol by three

*Report of Committee of the Scientific Section of the Philadelphia Branch of the American Pharmaceutical Association.

chemists of commercial laboratories, outside of Philadelphia, all of them being known to be highly efficient and reliable.

At the meeting mentioned above it was suggested that samples of a wine and an elixir be submitted to all Philadelphia chemists who were willing to cooperate with us in work on this very important subject. We furnished the samples, which consisted of a wine and an elixir, the latter being made up by myself, and containing only alcohol, water, sugar and caramel. On sending the samples to our chairman, W. A. Pearson, it was stated that the light colored sample was a natural wine, while the darker colored sample was an elixir, containing no highly volatile substances such as ether, chloroform, volatile oils, acids, etc. W. A. Pearson kindly distributed the samples among the Philadelphia chemists who expressed their willingness to cooperate. To each and all of them I would extend my heartiest thanks for their work and interest shown in this subject. Following are the names of the ten gentlemen who received the samples and reported their results:

1. M. Becker, with Smith, Kline & French.
2. C. S. Brinton, Food and Drug Inspection Laboratory, Philadelphia.
3. Geo. E'We, with H. K. Mulford Co.
4. L. Criesmer, a second-year-student at P. C. P., through Prof. LaWall.
5. W. Hilts, of U. S. Food and Drug Inspection Laboratory, Philadelphia.
16. Professor C. H. LaWall.
7. H. B. Mead, Laboratory of Prof. LaWall.
8. C. Roberts, of U. S. Custom House, Philadelphia.
9. H. M. Sechler, with Smith, Kline & French.
16. Otto Stockinger, with H. K. Mulford Co.

The alcohol in the distillate was determined by the different chemists either by means of the pycnometer or by the Westphal balance. The use of the pycnometer is, without doubt, preferable in very accurate scientific work; nevertheless the Westphal balance gives good results if properly handled, and provided the balance is very sensitive to the fourth decimal and standing on a perfectly level plane. Some of the chemists brought the temperature up or down to 15.6° C. before taking the weight or specific gravity, while the others made no corrections in regard to the temperature. Although the temperature has to be taken into account in determinations by any method, it is not necessary for determinations by the Westphal balance to bring the distillate to 15.6° C. It is only necessary to take the specific gravity at the same temperature at which the sample was originally measured. Then by use of the temperature corrections in the alcohol tables, sufficiently accurate results can be obtained. We certainly would obtain bad results if the respective preparations were measured for distillation at about 10° C. and the distillate measured at 35° C. or so. Some of the chemists used calcium carbonate, some sodium bicarbonate, and still others potassium hydroxide for neutralizing the free acids. In some cases the reports did not specify what had been used, or if anything had been used for neutralization.

The results found by the different operators were quite concordant, there being only a difference between extremes of 1.06 per cent. in the wine and 0.78

per cent. in the elixir. If the same method had been used by all, I am sure that much closer results would have been obtained.

The following results were obtained: (I give the names in alphabetical order).

WINE (the light-colored liquid)—

1—M. Becker	17.3%
2—C. S. Brinton, 17.71%—17.73%, average	17.72%
3—Geo. E'We, 18.22%—18.4%, average	18.30%
4—L. Griesmer, 18.36%	18.36%
5—W. Hiltz, 17.66%—17.68%, average	17.67%
6—Prof. LaWall, 18.28%—18.12%, average	18.20%
7—H. B. Meade	17.99%
8—C. Roberts	17.39%
9—H. M. Sechler	17.50%
10—O. Stockinger, 17.65%—17.4%, average	17.525%

Mr. O. Stockinger made three determinations of this same wine previous to the sample submitted by W. A. Pearson, and found:

1st—by plain distillation	17.6%
2d—after neutralizing with KOH	17.8%
3d—with an excess of KOH	17.5%
Average	17.63%

ELIXIR (the dark-colored liquid)—

1—M. Becker	25.00%
2—C. S. Brinton, 25.54%—25.55%, average	25.55%
3—Geo. E'We, 25.3%—25.91%, average	25.635%
4—L. Griesmer	25.51%
5—W. Hiltz, 25.55%—25.55%, average	25.55%
6—Prof. LaWall, 25.83%—25.7%, average	25.765%
7—H. B. Meade	25.35%
8—C. Roberts	25.35%
9—H. M. Sechler	25.54%
10—O. Stockinger, 25.4%—25.4%, average	25.4%

In calculating the alcohol percentage from specific gravity by means of the pycnometer or Westphal balance the following tables were used:

Messrs. Brinton and Hiltz used U. S. P. table and also table given in Government Bulletin No. 107 of the Bureau of Chemistry.

Messrs. E'We and Stockinger used U. S. P. table.

Prof. LaWall used U. S. P. table and also table according to Hehner, given in "Leach's Food Inspection and Analysis."

Messrs. Becker, Griesmer, Meade, Roberts and Sechler did not specify which table they used. Most probably the U. S. P. table, as otherwise they would have made some remarks in their reports about it. The difference in these three tables can be called negligible in this case, i. e., in determining the alcohol percentage in wines, elixirs, fluidextracts, etc. The specific gravity by all of the cooperators was taken at 15.6° C. or 60° F., so that no temperature corrections were necessary except by Messrs. E'We, Griesmer and Stockinger, who took the specific gravity at room temperature and made corrections by U. S. P. table. On using the Westphal balance, I personally prefer to bring the distillate to room temperature, taking the temperature exactly during weighing and making corrections afterwards according to U. S. P. table. I would now ask the following questions:

1. What method is preferable in determining the alcohol percentage in this

class of products and preparations (wines, elixirs, etc.), the pycnometer or Westphal balance? I ask the question from the standpoint of a large manufacturing house which sometimes has to make as high as thirty alcohol determinations per day.

2. If the Westphal balance is used, is it preferable to weigh or to take the specific gravity at 15.6° C., or to make temperature corrections according to U. S. P. table?

3. Which of the three tables mentioned is the most nearly correct and which should be adopted for standard: (1) U. S. P., (2) Bulletin No. 107, (3) Leach-Hehner?

4. Which chemical is best suited to neutralize acids with—potassium or sodium hydroxide, calcium carbonate, sodium bicarbonate, etc.?

These four questions refer to the reports of the cooperators' work. In addition, I would ask:

1. Which chemical is best suited to neutralize ammonia—sulphuric acid, phosphoric acid, etc.?

2. What is the best to prevent frothing?

3. What is the best to prevent bumping?

In our work to prevent bumping we use small pieces of unglazed or porous porcelain. To prevent frothing we use with advantage potassium bisulphate, in preparations which contain no acids which, by coming into contact with the acid salt would evolve volatile acids. A layer of melted paraffin is also of value in all cases.

The two samples tested by the cooperators and on which much concordant results were obtained were very simple in regard to their composition. I would greatly appreciate it if the chairman would request the further cooperation of those who assisted with this work, on more difficult problems; that is, on preparations of a more complex nature. I take the liberty of making some suggestions and comments:

A certain class of tinctures, fluidextracts, etc., seem to have an attraction for alcohol and show their unwillingness to part from it by foaming, frothing, bumping, "racketing," etc. Below are given a few of these:

Wild Yam
Quillaja
Burdock

Senna
Asafetida
Sarsaparilla

Trillium
Buchu
Cubeb

From these I would ask that you take your choice for the next series of cooperative tests on alcohol determinations. Some preparations need a double distillation, such as Elixir and Tincture of Ammonia, Aromatic, etc., first by means of sulphuric acid, and second, by means of potassium hydroxide. Preparations containing free iodine should be distilled with sodium thiosulphate and a little potassium hydroxide.

Spirit of camphor, etc., must first be freed from the camphor by the well-known sodium chloride method, before distillation. The addition of calcium hydroxide is of advantage in the distillation of Buchu and Valerian prepara-

tions. Not only will a perfectly clear distillate be obtained, but the bumping will also be considerably diminished.

On distilling unknown preparations with alkalies, tannin should always be used to precipitate any volatile alkaloids.

On closing my report, I would extend my thanks to Mr. Otto Stockinger and Mr. Geo. E'Ve for their valuable help and suggestions.

SUMMARY.

Chemist	Wine	Elixir	Pycno- meter	Westphal Plain %	Neutral %	Alkaline %	Average %
M. Becker	—	—	—	—			17.3
"	—	—	—	—			25.0
C. S. Brinton.....	—	—	—		CaCO ₃		17.72
"	—	—	—				
							25.55
							25.55
G. E'Ve	—	—	—	18.4		KOH	18.31
"	—	—	—	25.3			25.635
L. Griesmer	—	?	?	—			18.36
"	—	?	?	—			25.57
M. Hilts	—	—	—		CaCO ₃		17.67
"	—	—	—				
							25.55
							25.55
Prof. LaWall	—	?	?			NaHCO ₃ & Tannin	18.28
"	—	?	?				18.12
							25.83
							25.70
H. B. Meade	—	?	?			NaHCO ₃ & Tannin	17.99
"	—	?	?				25.78
							17.39
							25.35
C. Roberts	—	—	—	—		KOH	17.50
"	—	—	—	—			25.54
H. M. Sechler.....	—	—	—	—			
"	—	—	—	—			
O. Stockinger	—			—		KOH	17.65
"	—			—			17.4
				17.6			15.5
"	—			—			25.4
				—		KOH	25.4
				—			25.4

ANALYTIC LABORATORIES, H. K. MOLFORD, Co., March 12, 1911.

APPARATUS FOR THE DISTILLATION OF ALCOHOL IN PHARMACEUTICAL PREPARATIONS.

M. BECKER.

In order to overcome the principal physical differences encountered in the estimation of alcohol in preparations the apparatus shown in the accompanying illustration was devised. By its use the need for redistillation due to frothing and bumping is eliminated, consequently saving considerable time and labor.

NOTE.—Since Mr. H. L. Bernegau presented his contribution, no systematic co-operative work has been made by the committee, but Mr. M. Becker, in the Analytic Laboratory of Smith, Kline and French Co., has designed a suitable apparatus for the distillation of most pharmaceutical preparations.

It consists of an elliptical bulb (a) three inches in height, and two and a half inches in width, having a neck (b) three-fourths of an inch long, the opening of which is three-fourths of an inch. The lower end of the bulb (a) terminates with a gradually tapering stem (c) two inches long. The opening at juncture of bulb and stem is three-fourths of an inch and the opening at end of the stem is a quarter of an inch. The interior of the bulb contains a small curved tube (d) blown in at the bottom and extending one and three-quarters of an inch upward and curved so as to almost reach the side. At the base of bulb, slightly lower, and directly under the curved tube (d) is a small opening (e) to permit the

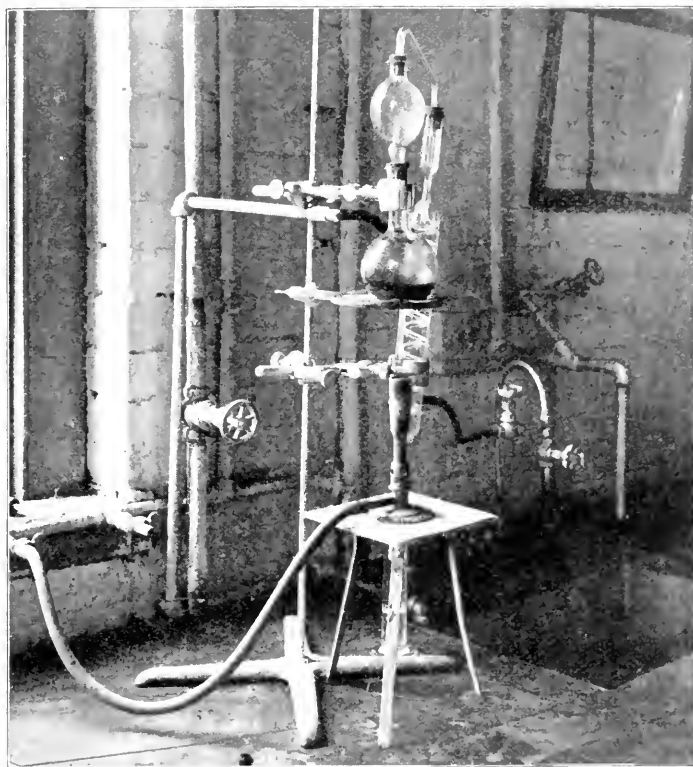


FIG. 1.—From Photograph.

passing of the condensed liquid back into the distilling flask. The stem (c) enables the apparatus to be fitted to an ordinary distilling flask. The neck of bulb was made short in order to more easily admit the tube (g) which is beveled at the end at an angle of 50 degrees and curved in an opposite direction to tube (d) below. This tube (g) is connected to the vertical condenser and can easily be made by the operator. For economy and convenience in cleaning this piece was made separately. It will be noticed that the opening (e) is directly under the curved tube (d) which prevents foam or liquid caused by any active bumping that may occur from passing over into the distillate. The curve in the tube (g)

having the beveled end is intended for a similar purpose, but it is not absolutely necessary.

If during a distillation there is such an active boiling and foaming that the distilling flask and part of the bulb are filled with foam, the curved tube (d) permits the passing of vapor from the flask, and relieves the pressure by allowing substances in bulb to return to the distilling flask through opening (e). In some cases the foam rises to the center of the bulb, but it is not carried over, and soon runs back into the distilling flask.

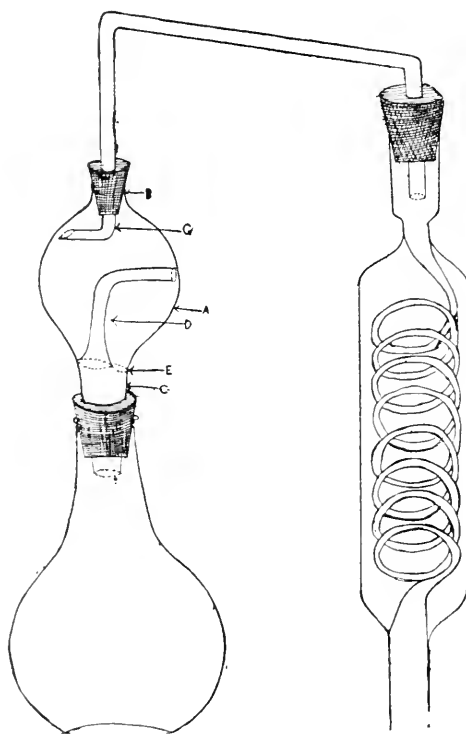


FIG. 2.—Showing Details of Distilling Bulb.

We have given this apparatus the most rigid tests and have never had occasion to make a second distillation. Under ordinary conditions considerable time is required for some fluidextracts, but with this apparatus we have never found it necessary to reduce the flame when estimating the alcohol in such difficult fluid-extracts as Rose, Sarsaparilla, Jumbul, Gillead Buds, Soap Bark, Grindelia, White Oak Bark, Kava Kava.

Those interested in making alcohol determinations, where interference by bumping or frothing occurs, will find a great convenience in the use of this apparatus, and will be spared the necessity of redistillation.

PYCNOMETER FOR THE DETERMINATION OF THE SPECIFIC GRAVITY OF ALCOHOLIC DISTILLATES.

C. S. BRINTON.

For several years we have been using with much satisfaction Reischauer's form of Specific Gravity bottle. This consists essentially of a narrow-necked graduated flask of about the same shape as an ordinary graduated flask used in volumetric work. Those, which we first used, were made for us on our own specifications by a commercial glassblower, but were not graduated by him. We specified that the necks of the flasks should not be over 6 mm. in diameter inside, that the flask be as light as possible without sacrificing strength, and that the

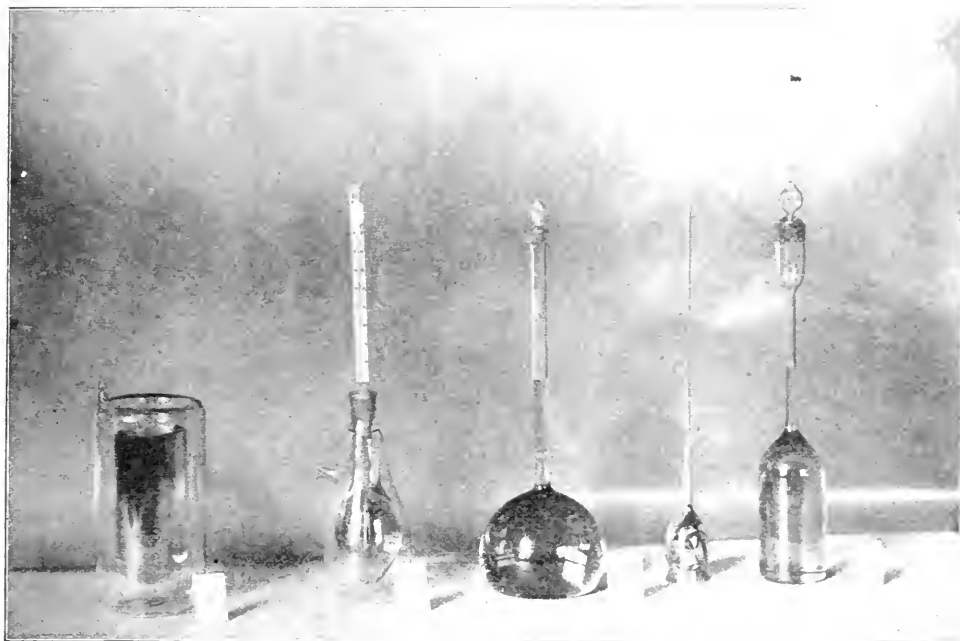


FIG. 3.

mark on the neck should be as low as possible. The empty (100 cc.) flasks, with stoppers, weighed 18 to 20 grams. The tare was obtained, then exactly 100 grams of water weighed into them at room temperature, the flask and water put into a constant temperature at $15.6^{\circ}\text{C}.$, and allowed to remain there until constant temperature is attained (about 30 minutes is ample time), the position of meniscus is then carefully noted and etched around neck. The tare is then again obtained on the clean dry flask and it is ready for use.

To obtain the specific gravity of any solution, the flask is filled above the mark—care being taken to get rid of air bubbles—and brought to constant temperature at 15.6° , the excess of solution above mark removed by a capillary pipette, neck dried by a strip of filter paper, bottle stoppered, wiped dry and allowed to

warm to room temperature, and weighed. With the 100 gram size it is not necessary to weigh closer than 1 milligram. Subtract the tare, and the specific gravity is obtained at once to five figures without calculation. When only small quantities are available, these flasks can be obtained to hold only 25 or 50 grams, but the necks are smaller and more care is required in filling. For complete directions on the use of this form of pycnometer see "Der Wein und seine Chemie," by Paul Arauner, p. 25-31.

In determining alcohol in any product, a wine for example, the specific gravity bottle is filled as above indicated, then contents transferred to an appropriate distilling flask, the specific gravity bottle rinsed out, and the rinsings added to the main portion. A small quantity of calcium carbonate is added to neutralize any acidity, a piece of porcelain (broken crucible cover) to prevent bumping, and water added to make a total volume about 50 per cent. greater than sample taken, and the liquid is then distilled, catching the distillate in the specific gravity bottle. Distillation is continued until the liquid is almost up to mark, then bottle and contents put in constant temperature bath at 15.6° as before. After about one-half hour the flask is filled exactly to mark with distilled water at 15.6, neck wiped out, etc., as before, and weighed, and tare being subtracted, gives the specific gravity direct when using 100-gram bottle.

These bottles when stoppered do not change in weight, except on long standing, such as overnight, and by following the method given above very accurate results can be obtained. The weights of contents on 100 gram bottles can be checked easily by different operators to less than 5 milligrams, which means a variation of only about 0.05 alcohol at the most, and the agreement is often closer than this amount. Agreement as close as this is not obtainable by the use of ordinary forms of apparatus. Flasks No. 1 and No. 2 in the attached photograph show two forms of this apparatus, form No. 2 being most satisfactory, if mark is low on neck in order to allow for expansion, as it is more stable than form No. 1. The long slender funnel tube is used to fill both forms of bottles.

Reischauer's bottles as shown in photograph form No. 1 in 25, 50 and 100-grams capacity, are listed and kept in stock by Eimer & Amend, New York City.

DEWAR VESSELS AS APPLIED TO THE DETERMINATION OF SPECIFIC GRAVITY OF LIQUIDS.

GEORGE H. MEEKER, PH. D., LL. D.

The now familiar principle of the Dewar flask, originally designed by Professor Dewar for the heat insulation of liquid air, and at present so extensively used for maintaining liquids at constant temperature, is most advantageously employed in maintaining liquids at constant temperature during specific gravity determinations. Two types of such apparatus are here described: one type to be employed by the method of the hydrostatic balance, and the other as a pycnometer.

Hydrostatic Balance Type of Dewar Vessels This type is shown in the accompanying etching as No. 4. It consists of a double walled glass cylinder having a

vacuous space between the walls. It is designed to be employed on the specific gravity bench of the usual analytic balance. Dimensions in millimeters are as follows: height, 100; external diameter, 53; internal diameter, 33; internal depth, 90. The weight when empty is 85 grams and the capacity of the internal chamber is 75 cc. These dimensions may, of course, be somewhat varied. In addition to the cylinder just described, one needs a suitable plummet and suspensory wire. My own practice is to use a small pear-shaped lump of glass, having a hooked apex, as the plummet. This plummet is conveniently made in the blast lamp flame by the analyst himself from a piece of heavy glass rod. For sustaining the plummet I employ fine phosphor-bronze wire, except where special circumstances demand the use of platinum wire. The use of phosphor-bronze is dictated by the fact that it is easy to procure very fine, thoroughly annealed wire of this character, say nothing exceeding .14 mm. diameter. The cost is negligible, and one spool will last indefinitely. I have not found other cheap wires so readily obtainable of suitable fineness, well annealed and so reasonably resistant to chemical action. When platinum wire must be employed I use a wire not exceeding .05 mm. in diameter.

In making a specific gravity determination, a suitable length of the wire is prepared by twisting a loop at each end—one of the loops being intended to hang upon the hook of the balance, and the other being intended for the suspension of the plummet by its hook. Two such wires are prepared—substantially exact duplicates of each other. The analyst, having ascertained the depth to which the lower end of the suspensory wire is to dip beneath the surface of the liquid, cuts off that much of one of the two prepared suspensory wires and then weighs the two parts separately—so as to ascertain what fraction of the weight of the other wire will be immersed in the liquid during the actual specific gravity determination—the pieces being then discarded. The other or actual, suspensory wire and the plummet are now weighed separately, and to the weight of the plummet is added that fraction of the weight of the suspensory wire which is immersed. We will call this combined weight of the plummet and the immersed portion of wire the *weight of the plummet*. The liquid is now brought into the Dewar cylinder at a definite temperature. This is accomplished by immersing a thermometer in the liquid contained in another vessel, bringing the liquid by usual methods of manipulation to the desired temperature and then pouring it backward and forward from the auxiliary vessel to the Dewar cylinder, etc., a sufficient number of times to bring the inner glass walls of the cylinder to the same temperature as the liquid—after which the cylinder is filled to a suitable depth and the liquid will now maintain this temperature practically unchanged throughout the experiment. There is, of course, some opportunity for change of temperature at the surface of the liquid by its contact with the air; but even this local alteration may be made negligible during the time of the experiment by the use of a perforated cover. The weight of the plummet whilst suspended in the liquid is now determined and the usual calculation made: that is to say, from the weight of the plummet in air is subtracted the weight of the plummet in the liquid, and this difference in weight is divided by the difference similarly obtained when the observation is made upon pure distilled water. Of course, temperature plays a

part; and in alcohol determinations the observations should be made at such temperatures as may eventually be officially directed. In making weighings with the plummet immersed, equilibrium must be established with the needle of the balance stationary at zero and the wire immersed to the predetermined depth.

It is believed that the method just described is the most accurate method which could be recommended in the premises. It requires no special apparatus except the special Dewar cylinder.*

The Pycnometer Type of Dewar Vessel: This type is shown in the accompanying etching as No. 3. The pycnometer is best made from Jena thermometer glass, because in this case its capacity at stated temperature once determined, remains fixed—which is not the case when ordinary glass is employed. The apparatus consists of a double-walled glass flask having a vacuous space between the walls and having an accurately ground glass stopper which is one piece with an inserted thermometer graduated from minus 4° to plus 35° C. by $1/5^{\circ}$. Capacity of inner vessel with stopper inserted, 25 cc. Total weight of apparatus empty, 40 grams. Dimensions in millimeters are: total height over all with thermometer inserted, 210; total height of flask, 100; greatest diameter, 44. In ordering such an apparatus care should be made to specify very accurate grinding of the stopper and the absence of any annular channel exteriorly between the stopper and the neck of the flask. Unless this specification is made the maker is apt to be a little careless and to leave an annular space which is somewhat troublesome to wipe dry before weighing.†

The advantage which the apparatus under discussion has over the usual pycnometer arises from the fact that temperature alterations of the investigated liquid, which are the bane of ordinary pycnometer measurements, are here eliminated because of the thermal insulating property of the vacuous envelope.

The apparatus is used like an ordinary pycnometer, but it is probably desirable to state that the liquid is brought to the specified temperature exactly as in the case of the hydrostatic balance method described above.

*This has been furnished from Germany to the Medico-Chirurgical College of Philadelphia at 56c. duty-free. It may further be interesting to note that the writer uses this Dewar cylinder also for pyrometric measurements by the principle of the water calorimeter pyrometer. It is only necessary to have a small lump of copper and an ordinary mercurial thermometer in addition to the Dewar cylinder in order to be enabled to make convenient, rapid and reasonably accurate measurements of temperatures up to 1000° C.

†Such an apparatus made in Germany, costs \$1.12, duty-free.

GENERAL METHOD PROPOSED FOR THE ESTIMATION OF ALCOHOL IN PHARMACEUTICAL PREPARATIONS.

W. A. PEARSON.

It is with much timidity that I propose a general method for the estimation of alcohol in pharmaceutical preparations, because so much has been written on this subject and no two authors have agreed on any technic for the determina-

tion of alcohol in a single product, much less have they agreed on a general method for all pharmaceutical preparations.

The problem is made still more complex by the fact that the internal revenue officers demand that alcohol be determined at 60° F. (15.6° C.), the Bureau of Standards desire to work at 20° C., while the Revision Committee of the United States Pharmacopœia have declared that specific gravity shall be taken at 25° C. Furthermore, many pharmaceutical products demand special treatment before the alcohol can be distilled from them unmixed with other volatile substances, even if the mechanical difficulties in the distillation have been eliminated. Unusual and expensive apparatus cannot be recommended unless such refinements will materially increase the accuracy of results; yet often the accuracy of the determinations are of so great commercial importance that every precaution must be taken to insure the best results. It is obvious that no general directions can be given that will be suitable for preparations where preliminary treatment is required before the distillation can be made; hence these directions must be specifically prescribed under each preparation in which the alcohol is to be determined, as is done in the United States Pharmacopœia, 8th Revision, in many cases preparatory to the carrying out of the tests for arsenic, and heavy metals.

General Method for Determination of Alcohol.

Adjust the temperature of the preparation in which the alcohol is to be determined to 25° C., then measure exactly 100 cc. of it into a 100-cc. graduated flask. Pour into a distilling flask having capacity of about 300 cc. and rinse the 100-cc. flask with several portions of distilled water, 30 cc. in all, and add rinsings to distilling flask. Add to the distilling flask any substances that may be especially prescribed, and connect the distilling flask with a suitable safety bulb, and this to a condenser. Distill nearly 100 cc. at the rate of about two cubic centimeters per minute into a narrow-necked pycnometer, which has been standardized and graduated to hold 100 grams of distilled water at 25° C.

Immerse the pycnometer to its graduation in water at 25° C. for one-half an hour and after that time fill to graduation with distilled water having a temperature of 25° C. Dry outside of pycnometer and inside of narrow neck nearly to graduation with a cloth and weigh. The weight of the contents of the flask, multiplied by 0.01, equals the specific gravity of the alcohol distillate. Compare this with U. S. P. tables showing specific gravity of alcohol at 25° C.

Acknowledgement.

Nothing original can be claimed for the method I have proposed and it will have served the purpose for which it was intended if its objectionable points are eliminated by criticism and suggestions so that a satisfactory general method for the estimation of alcohol in pharmaceutical preparations will be developed.

My sincere thanks are due Mr. L. Henry Bernegau and Dr. C. S. Brinton for their active cooperation, and also to Professor G. H. Meeker and Mr. M. Becker, who were not members of the committee, but who kindly consented to contribute their suggestions to help a worthy cause.

WEIGHTS AND MEASURES SHOULD BE GUARANTEED U. S. P.
STANDARD.

JOSEPH W. ENGLAND.

There is probably no more important need in the pharmaceutical world than the necessity of having accurate and uniform weights and measures, especially measures of volume.

It is simply idle to standardize the more potent remedies of the Pharmacopoeia, with the greatest possible degree of accuracy, and then measure them with measures that are not accurately graduated.

As an illustration, three dozen 8-ounce graduates were purchased by Whittall, Tatum & Co., in widely separated localities and compared with the standards used in their factory. The results were startling. They were as follows:

Not *one* of the 36 graduated measures were accurately graduated.

Some were better than others, but all were bad.

On one graduate, the 6-ounce mark was correct, but all the remaining ones were wrong.

In one lot of twelve graduates, 6 fluid drachms of liquid were required to reach the graduation marked $\frac{1}{2}$ fluidounce, a variation of 50 per cent.

All graduates should be required to be graduated by manufacturers, and marked, "Guaranteed U. S. P. Standard by ———," and pharmacists, for self-protection, should buy no other. It is fully as important that weights and measures be guaranteed to be U. S. P. Standard as it is of drugs.

A standard graduate should be made of good flint glass properly annealed and properly graduated, the usual types being conical, narrow cylindrical and broad cylindrical. The best forms are of blown glass, not pressed glass. The annealing of the glass is done in lehrs or tempering ovens 75 to 100 feet long. The graduates go in at one end red hot, and in twelve hours comes out at the other end cold, properly annealed. It has been alleged that graduates may be annealed by placing them in cold water, bringing the water to the boiling point and cooling. But glass workers claim that such a method is of no practical value, as the temperature of the boiling water is not high enough to permit any great readjustment of the relative positions of the molecules of the glass.

The standard followed by Whittall, Tatum & Co. is 1 fluidounce=29.5161 grams of water when weighed in dry air at a temperature of 15° C., barometric pressure of 760 mm., the coefficient of expansion of the glass being assumed to be 0.000025 and the density of the brass weights 8.3. These figures are derived from the original data in use at the National Bureau of Standards of the United States, Washington, D. C., and the calculations are carried to any number of decimals necessary in the case of each instrument. The best method of graduation is that in which the graduates *deliver* the quantities indicated, every line in each graduate being determined by actual measurement. Where mechanical division is employed, the graduates will vary in delivery.

*Read before Pennsylvania Pharmaceutical Association, June, 1912.

There should be no variation in the delivery of graduates, other than that caused by the personal factor. In measuring liquids, the lower meniscus should be, of course, always observed; if the graduate is not held in a perfectly level position, more or less of the liquid will be measured, according as the graduate is tilted backward or forward.

Personal accuracy in the reading of graduates depends somewhat upon the diameter of the graduate at the point where the reading is taken. It is for this reason that the narrow cylinder is apt to be more accurate than the cone, and is preferred in analytical work; the cone is sufficiently accurate, however, for galencial work, and is more easily cleaned out.

The weights and measures recognized by the United States Pharmacopoeia are derived from or based upon those of the metric system as the United States Prototype Standards of the Meter and Kilogram in the custody of the National Bureau of Standards at Washington, D. C., and the system of Apothecaries Weights and Fluid Measures as used in England prior to 1825, the weights being originally derived from the old English Troy Weight, and the Fluid Measures from the Wine Measure. As is well known, the metric weights and measures are used in all pharmacopoeial work, while the Apothecaries' Weights and Fluid Measures are used by the physicians of this country in prescribing and the pharmacists in dispensing; the use of the metric weights and measures is exceedingly limited, but it is growing.

According to the U. S. P. (VIII), p. LIII, the standard temperature for the solubility of substances in liquids, for taking specific gravity and the volumetric operations in the Pharmacopoeia is 25° C. (77° F.); in the former revision it was 15° C. (59° F.) This change was made on account of its greater convenience and because it suited the greatest number of laboratory experts and pharmacists in the United States. In the case of alcohol and wine, however, the temperature of 60° F. (15.667° C.) was recognized for the present, since all the laws and regulations of the United States, referring to alcohol and alcoholic liquids in general, are still based on this degree of temperature.

The standard temperature used by the glass manufacturer for graduating measures is still 15° C., although the standard temperature was changed in the eighth revision of the Pharmacopoeia from 15° C. to 25° C., which it will be probably in the ninth revision; but this error will be doubtless corrected by the manufacturer as soon as the temperature for the ninth revision has been decided upon.

The standard fluidounce of water used by the manufacturer in graduating his measures is: 1 fluidounce=29.5161 grams at 15° C. The standard of the U. S. P. (VIII) is 1 fluidounce=29.5737 grams at the maximum density of water (4° C.) in vacuo. This is a very small difference, when the expansion of the water from 4° C. to 15° C. is considered; and proper adjustments will doubtless be made as soon as the standards of the ninth revision become official.

The use of graduated prescription bottles should be discouraged. They vary greatly in accuracy, and their use is a delusion and a snare. They are blown in moulds, and vary in content according to distribution of the glass in the mould. Sometimes this is more uniform and sometimes less, and hence, the quantities

marked on such containers must be inaccurate. There is no substitute in prescription work for an accurately graduated measure.

In conclusion, it should be added that the American-made glass graduates, in accuracy and appearance, are superior to the foreign makes, and much more likely to be in accord with U. S. P. standard.

CUDBEAR AS A PHARMACEUTICAL COLORING.*

GEORGE M. BERINGER.

Since 1874, when Hans Wilder¹ directed attention to the advantages of cudbear over cochineal and carmine as a coloring agent for pharmaceutical preparations, it has become very popular and is now extensively used. As a vegetable dye miscible with either slightly acid or alkaline solutions, with the production of acceptable shades of red, it has been used by many almost as a universal coloring where red colored liquids are wanted. Despite its extensive use and desirable tinctorial properties, one has but to note the criticisms in the pharmaceutical press to learn that it has not proved entirely satisfactory.

The principal complaint has been the lack of uniformity in the color of preparations as made by formulas in which the tincture of cudbear was directed. This tincture as found in the drug stores is exceedingly variable, due in part to the variability of commercial cudbear and in a large measure to the imperfect extraction of cudbear by the official N. F. formula.

This tincture is directed in a number of the National Formulary recipes, and in the revision now in progress it has again been decided to retain cudbear as a coloring agent. The desirability of adopting a method of standardizing the tincture is obvious and a sub-committee on color standards have been giving earnest consideration to this vexing problem.

A few of the suggestions offered for this purpose may be here mentioned. One of the earlier thoughts was the publication of a color chart with the shades designated by numbers and to indicate in the formula for a preparation the number of the shade that the product should match. A similar suggestion was to color silk thread or woollen yarn to the desired shades, and chart and number these as guides. Tinted glass, especially that known as "ruby flash glass," was recommended for comparing acid solutions of cudbear. Tintometers were recommended, but these are beyond the reach of the average pharmacist and so not practicable. A novel proposition along this line was offered by Harvey I. Leith,² namely, that standard glass rods be prepared of definite diameter and length and colored in their manufacture according to standards established by the Committee on National Formulary. Each rod to have a groove at the top bearing a tag with a number indicating the color. A rod of the standard tint dipped into a preparation would not be discerned if the coloring matched; if the rod showed it

*Presented at the meeting of the New Jersey Pharmaceutical Association, Atlantic City, N. J., June 5, 1912.

¹American Journal of Pharmacy, 1874—299.

²American Druggist, 1910—175.

would indicate that the preparation was off in color. None of these suggestions were found to be practicable. The question naturally arises as to the proper directions that would have to be given in such schemes to insure the manipulator matching the shade.

A more promising line of work has been the attempt to standardize dilutions of cudbear tinctures against chemical solutions of definite strength and color such as solution of iodine, solution of gold tribromide or an alkalized phenolphthalein solution. The latter, a suggestion of Mr. Otto Raubenheimer, has been more favorably considered by the committee, and will be more particularly referred to later on. Other methods suggested have been chemical, such as the determination of the tinctorial value by the amount of sulphurous acid or solution of sodium hypochlorite required to bleach out a specified volume of the tincture previously well diluted.

Chairman Diehl³ is undoubtedly correct in his opinion "that any other than the simplest method of standardization will prove disastrous since it is not likely to be carried out by the average pharmacist." His suggestion was⁴ "that comparison of the diluted tincture should be made with dilutions of the purest attainable form of the real active coloring principles." Prof. H. V. Arny⁵ states that "orcein, the active principle of cudbear, was found to be of uniform tinctorial power and a solution of orcein 1 to 40,000 was found to match a dilution of 1 to 100 of a sample of tincture of cudbear."

If a purified cudbear or a satisfactory extract thereof of a uniform quality could be readily prepared, then the problem of standard red colored solutions would be simplified. Still better would be the isolation of the coloring principles in a reasonably pure condition. A tincture made with a definite proportion of such extract or coloring principle should not vary greatly and only slight difference of shades could exist in the preparations colored therewith. In the investigations of the writer he has endeavored to keep this thought continuously in mind and his experiments have been largely directed thereby.

Cudbear is one of the interesting group of dyes, orchil, cudbear and litmus, that are commercially produced from various lichens. Lichens contain in their tissues a number of different coloring principles, and E. Bachmann,⁶ who studied this subject, distinguished by micro-chemical reactions sixteen different pigments, including greens, yellows, browns and reds of various shades. Moreover, various lichens contain colorless acids and ester-like compounds of orcin and closely related substances which, through the action of alkalis, air and water split to produce first *orcein*, which is itself colorless, but by the continued action of ammonia and air is converted into *orcein* and other colored substances. In former times, the ammonia needed was supplied by the use of stale urine. It is to be hoped that, with the modern methods of obtaining ammonia, this disgusting process is no longer practiced; yet the odor obtained from some samples seem to indicate the possibility of its continuance. By the use of different species of

³A. Ph. A. Bulletin, 1909—379.

⁴A. Ph. A. Bulletin, 1910—371.

⁵A. Ph. A. Bulletin, 1910—371. Also Practical Druggist, 1912—24.

⁶Pringsheim's Jahrbucher, Vol. XXI, p. 1.

lichens and modification of the process and of the alkali used, different end products are produced resulting in the commercial dyes named.

Cudbear is stated to be prepared principally from certain species of *Lecanora* and *Variolaria*. *Lecanora tartarica* of northern Europe is said to be the source of most of that in the market and hence this species has been named the cudbear plant or cudweed. The name cudbear was given to this dye in honor of Dr. Cuthbert Gordon, who introduced it as a dye into Great Britain in the latter half of the eighteenth century. As a dye it is indifferent to cotton, but valuable in the dyeing of wool and silk.

As a commercial product it is very prone to adulteration, and in pharmacy its use should be restricted to a selected article that has been carefully tested and found to comply with the standard adopted. While good cudbear yields an ash of from 5 to 12 per cent, some samples examined gave an ash equivalent to 30 per cent. This consists very largely of sodium chloride, which is a common adulterant and which according to Allen⁷ "is sometimes added to reduce an unusually rich article to a uniform standard of quality." In one sample the writer found such an abundance of salt present that a portion crystallized out on evaporating the ammoniacal solution as directed in Hankey's process for tincture of cudbear.

As the coloring of cudbear is only slightly soluble in cold water I strongly advocate that all cudbear used for pharmaceutical purposes be first washed with at least five times its weight of cold water. On mixing cudbear with this amount of cold water and allowing it to macerate for a few hours, with occasional agitation before filtering, the aqueous solution removes most of the sodium chloride, some ammonium salts with their empyreumatic odor, as well as some organic products that are undesirable, such as undecomposed lichen acids, partly converted orcin and extractive. The washed cudbear is more readily extracted and loses scarcely any of its real tinctorial power. This is a simple refinement that should be introduced no matter what formula be adopted for the preparation of a standard tincture.

TINCTURE OF CUDBEAR AND ITS STANDARDIZATION.

It is impossible to entirely exhaust cudbear of its coloring, and in the preparation of the tincture it is safe to assert that the amount directed in the N. F. formula for *Tinctura Persionis* 125 gm. in the liter is not half extracted and that an equally satisfactory preparation would result if the cudbear be reduced one-half, and hereafter a tincture of not over 10 per cent drug strength should be directed.

The directions for the manipulation in the N. F. read exceedingly simple: "Pack the cudbear in a suitable percolator, and percolate it with a mixture of one (1) volume alcohol and two (2) volumes of water until 1000 cc. of tincture are obtained."

Cudbear is a most troublesome substance to percolate. It is difficult to moisten evenly and not infrequently a portion becomes pasty and other portions scarcely moistened, with the result that one is prone to obtain either channeling and uneven extraction, or more frequently clogging of the percolator, which may even completely stop the process. Consequently, if percolation is to be adopted, the plan

⁷Commercial Organic Analysis, Vol. III, pt. 1, p. 324.

of admixing with the cudbear an inert diluent must be resorted to. A number of substances, such as sand and ground pumice, which usually serve for this purpose with other refractory drugs, have not proved satisfactory with cudbear. In my experience ground cork has proved entirely satisfactory, about one-third to one-half of the weight of the cudbear being sufficient. The commercial ground cork of the factories, however, should not be used, as this is made from cork refuse and siftings and is full of foreign matters and dirt and has a musty odor. Unsightly corks, or even old corks if thoroughly cleansed by boiling with water and drying, will serve the purpose and these can readily be reduced to a powder, passing through a No. 20 to a No. 40 sieve by the use of an almond grater, a useful implement, that should be in every drug store and laboratory.

The official menstruum is likewise too weak in alcohol to serve as a solvent for the coloring matters present. Water alone is a poor solvent for these and alcohol is one of the best, and if the menstruum is to be hydro-alcoholic then a mixture of at least alcohol three volumes and water one volume is to be recommended. The coloring principles present in cudbear are in part, associated as ammonia compounds, and some are not soluble even in alcohol until alkali be added. Orcein, the most important dye constituent of cudbear, as found in the market, is but indifferently soluble in alcohol and its color is not fully developed unless ammonia or other alkali be present. Hence, ammoniacal extraction of cudbear seems to be indicated, and when the extraction is so made then the alcohol can be reduced to the amount needed as a preservative. This is the principle that has been followed in the formula for tincture proposed by Wm. T. Hankey:⁵

Cudbear 125 gm., macerate for 36 hours in a mixture of ammonia water 125 cc. and water 1877 cc., shaking at intervals, then filter and wash the residue on the filter with water until 2000 cc. of filtrate is obtained. Evaporate the filtrate to 500 cc., then add 330 cc. of alcohol and sufficient water to obtain 1000 cc. of tincture.

This is a decided improvement on the present N. F. formula, but the extraction of the cudbear is far from complete, the ammonia directed being insufficient for this purpose. Moreover, the tincture made by this formula shows a tendency to precipitate.

It has been proposed to adopt the Hankey formula in this revision of the National Formulary⁹ with the modification that the tincture is to be standardized by the method proposed by Mr. Raubenheimer. The directions being that 1 cc. of the concentrated ammoniacal extract mixed with 399 cc. of water and 1 drop of 1% solution of ammonia should match the color of the Standard Pink Phenolphthalein Solution. The Standard Pink Solution is to be prepared by mixing 1 cc. of Phenolphthalein T. S., U. S. P., with 2 drops of Solution of Potassium Hydroxide and sufficient distilled water to make 100 cc.

If these match, the dilution with alcohol and water is carried out as directed in the formula. If they do not correspond, then the amount of the cudbear solution required to match the standard is determined by a repetition of the color comparison and the proper degree of dilution or concentration is thus fixed. The standard tincture should be of such a strength that 1 cc. diluted with 199 of water should match the standard pink phenolphthalein solution.

⁸A. Ph. A., 1908—p. 93.

⁹Bulletin of N. F. Committee No. 31—p. 363.

The writer experimented with standard color test solutions as proposed by Raubenheimer¹⁰ and also with the solution of orcein 1 to 40,000 as proposed by Army.¹¹ The latter had a more decided red tint than the dilution of the cudbear tincture prepared by the proposed formula and was more difficult to match. With some of the samples of tincture made by other formulas the dilution did not match the tints of either of these proposed standards. It is apparent that while the amount of alkali directed to be added to the cudbear dilution (1 drop of 1% solution of ammonia) may be sufficient to develop the purplish tint desired in a tincture made by ammoniacal extraction it would be inadequate for such a purpose in tinctures made by other formulas. This was all the more evident in the stronger tinctures resulting from my experiments. In some of these a nearer approach to an exact matching of tints was obtained by a modification of Raubenheimer's standard made by increasing the alkali and diminishing the phenolphthalein thus, 1 cc. of solution of potassium hydroxide, 0.2 cc. of phenolphthalein T.S. and distilled water sufficient to make 100 cc. Using all three of these solutions for comparison it was found difficult to accurately match some of the dilutions of the tincture. Comparisons were more readily made, however, if the standards were diluted to 200 cc., or one-half of proposed strength.

While these standards may serve the purpose for the comparison of tinctures made by the proposed N. F. formula they are not entirely satisfactory and they are of questionable value in determining the strength of cudbear tinctures made by other processes. In some of these, the directions given must be deviated from at least by the addition of more ammonia, and then it becomes difficult to determine in each case the exact amount of alkali that is required to produce the purplish pink tint to match that of the standard. An excess of alkali will produce a deep purple not at all comparable with the standards that have been proposed.

In order to make comparisons of different tinctures, the writer surmised that if sufficient alkali be added to the diluted tinctures to produce the full purple coloration then the strength of such dilution should be readily and more accurately estimated. Such a method would necessitate the selection of a standard purple solution of known value. It was hoped that the Army orcein solution of 1-40,000 upon the addition of alkali would serve the purpose, but on trial it was found that the shade of purple it produced varied too greatly from that of cudbear solutions to be at all satisfactory. This is explained by the fact, as will be shown later, that the other color substances associated with orcein in cudbear materially influence the colors produced by the tincture and that they cannot be ignored. It is possible that a dilute solution of potassium permanganate may serve for such standard.

From the cudbear selected for the experiments, a number of samples of tincture of cudbear were prepared by different formulas. In all of these 125 gm. of the cudbear was used to the liter of tincture so as to make the comparison with the formula of the N. F. III fair. The cudbear was previously washed with 5 times its weight of water before extraction and ground cork used as the diluent. The products were tested by determining the amount necessary to be diluted to

¹⁰Bulletin Committee on N. F. No. 31—p. 364.

¹¹The Practical Druggist, 1912, April—p. 24.

100 cc. to match as near as possible the proposed standards. Subsequently, a practical test was also added, the determination of the amount of each necessary to color 100 cc. of Aromatic Elixir, U. S. P., to a uniform color; 1 cc. of the sample made by the N. F. III formula being used as the basis of this test. The following tabulated statement shows the results:

No. Formula.	Army Orcin Standard.	Raubenheimer Standard Phenolphthalein Pink Solution.	Beringer Modification.	To Color 100 cc. Aromatic Elix.
1—National Formulary III.	3. cc. after adding 3 drops NH_3 (1%).	2.4 cc. after adding 5 drops NH_3 (1%).	2.2 2.2 cc. drops NH_3 (1%).	1. cc.
2—Hankey's Recipe.	2. cc. after adding 2 drops NH_3 (1%).	1.7 cc. after adding 3 drops NH_3 (1%).	1.5 cc. after adding 2 drops NH_3 (1%).	.8 cc.
3—Menstruum—Diluted Alcohol.	1. cc. after adding 2 drops NH_3 (1%).	.8 cc. after adding 2 drops NH_3 (1%).	.6 cc. after adding 4 drops NH_3 (1%).	.3 cc.
4—Menstruum—Alcohol 3 vols. Water 1 vol.	.8 cc. Tint not well matched.	.5 cc. after adding 2 drops NH_3 (1%). Difficult to match exactly.	.5 cc. after adding 2 drops NH_3 (1%) not exactly matched.	.2 cc.
5—Menstruum—Alcohol.	1. cc. Dilution cloudy and difficult to match exactly by addition of NH_3	.65 cc.	.65 cc.	.22 cc.
6—Menstruum—Stronger Ammonia Water 25cc.; Alcohol 975 cc.; finish with alcohol.	1.2 cc. Dilution too purple; comparison approximate only.	.8 cc.	.9 cc.	25? cc. Not same tint.
7—Menstruum—Ammonia Water U. S. P. 1 vol.; Water 3 vols.; percolate 4000 cc. Evaporate to 750 cc. When cold add alcohol 250 cc. and water q.s. to make 1000 cc.	.8 cc.	.57 cc. a good match.	.6 cc. good match.	.2 cc.
8—Mix the cudbear with Hydrochloric Acid 25 cc. allow to dry and then percolate with alcohol to 1000 cc.	.5 cc. after adding 4 drops NH_3 (1%).	.5 cc. after adding 4 drops NH_3 (1%).	.5 cc. after adding 4 drops NH_3 (1%).	.2 cc.

While these experiments do not permit of the exactness of determinations made by the methods of chemical analysis, they are nevertheless sufficiently instructive to permit of the following deductions: The present N. F. formula gives the poorest preparation for the reasons explained. The formula proposed for the revision is not the best that can be devised, and does not extract the cudbear nearly as thoroughly as can be done by percolation with ammonia water, as in formula No. 7. If the N. F. is to adopt a formula in which the extraction is to be made with ammonia water then formula No. 7 is to be commended. The great increase in tinctorial power obtained by using a menstruum of proper alcoholic strength is proved, and if alcoholic extraction is to be the basis of the official formula, then formula No. 4 should be approved.

Formula No. 8 is based upon the principle of neutralizing the alkaline bases present in the cudbear and then extracting the liberated colorings with alcohol. The results are pleasing, the preparation is perfectly clear and keeps without change, which cannot be reported of the samples made by ammoniacal extraction which, after keeping for several months, show more or less tendency to precipitation. The product shades toward a brick-red on account of the free acid present, but on dilution gives a bright red to cherry-red. While the acidity might prove objectionable in some preparations the results indicate a method of using cudbear to advantage in some solutions where the trace of acid is not contraindicated.

THE COLOR CONSTITUENTS OF CUDBEAR.

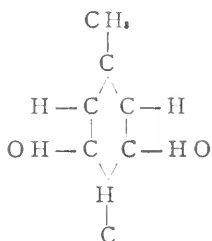
The text-books quite commonly are contented with the statement that the principal coloring substance present in orchil and cudbear is *orcein*. Still more common is the misleading statement that *orcin* in the presence of ammonia and air produces a colored substance *orcein*. No mention is made of any other colors produced by such exposure or oxidation and so generally the value of cudbear as a dye has been attributed entirely to the orcein content. The attempt to standardize cudbear and its tincture have likewise, in a large measure, taken the direction of comparing these with standard solutions of orcein. The assumption here again was that orcein represented all that was valuable or essential in cudbear as a coloring for pharmaceutical preparations. If such assumption was correct then the problem of obtaining uniform colored solutions with cudbear could be readily solved by the use of solution of *orcein*.

My experiments on the color constituents of cudbear were primarily undertaken with the thought of formulating a practical method of isolating the orcein in a state of sufficient purity to be used satisfactorily as a coloring in pharmacy. I have found it a most fascinating field of study, associated with peculiar and bewildering difficulties. The time at my command has not permitted of a thorough investigation of the colors isolated and the incompleteness of the investigation is admitted. Some of the results and conclusions are presented in this communication. It will be impossible to give herein all of the methods tried and many details of the experimentation are necessarily omitted.

The studies of E. Bachmann³ indicate the complexity of the study of the lichen pigments. The numerous organic acids present in this family are in nature's laboratory largely converted into orcin. These acids have been the subject of elaborate investigations by many of the most prominent European chemists. The

facility with which they form esters further complicates the study and must affect the colored products resulting from their oxidation, and present in the commercial dyes.

Orcin is not only present in many of these lichens but is increased in the process of manufacture of the dye by splitting up the organic acids and compounds by heating with alkali. It can be produced by a number of processes and when pure appears in colorless, sweet tasting crystals, containing water of crystallization and melting at 58°. It is soluble in water, alcohol and ether.¹² Chemically orcin is dihydroxy methylbenzene or Dioxytoluol $C_6H_3(CH_3)(OH)_2 + H_2O$.



Its close relationship to benzene shows that nature had anticipated man in establishing in her laboratory dye factories that simulated the process of the aniline dye chemists. The manufacturers of the lichen dyes have produced the same coloring materials from natural sources that can be duplicated in the chemist's laboratory by modern synthetic methods from definite chemical compounds. A priori, one could readily predict that orcin would yield a number of substitution compounds besides *orcein*.

Robiquet¹³ was the first to observe that orcin in the presence of air and ammonia yielded a dye and named this body *Orcein*. This was further studied by Heeren¹⁴ and Dumas¹⁵ and Kane¹⁶. It was learned that orcein could be readily produced by exposing slightly moistened orcin in a watch crystal over a vessel containing strong solution of ammonia until it became brown and then dissolving this in water with the aid of a few drops of ammonia water and from this solution the orcein was precipitated by acetic acid.

From commercial orchil, orcein can be produced by moistening with hydrochloric acid, drying and then extracting with boiling alcohol. The alcohol is distilled off and the residue washed with water and then with ether when a carmine red powder remains.¹⁷

According to Liebermann¹⁸ two dyes are produced by the action of air and ammonia on orcin. Both being brown amorphous substances with green lustre.

¹²Schmidt Pharm. Chem., 1012.

¹³Ann. Chem and Phys. (2), 47—238.

¹⁴Schweigger's Journ. of Chem., 59—page 313.

¹⁵Ann. Chem. Pharm., 27—145.

¹⁶An. Chem. Pharm., 39—25.

¹⁷See Die Chemie der Natürlichen Farbstoffe, Dr. Hans Rupe, to which I am indebted for many of these references.

¹⁸Ber. d. deutsch. chem. Ges. 7, page 247, 8, page 1649.

The one which is the chief product when the ammonia is in excess is the least soluble in alcohol and ammonia.

Especially worthy of note was the investigation of Zulkowski and Peters,¹⁹ who found that on allowing orcin to stand for two months over ammonia that three different dyes were produced: (1) Red orcin, which crystallized from hydroalcoholic solution in microscopic crystals, which yield a brown powder. The solution in alcohol is carmine red and with alkalis and alkaline carbonates gives a blue violet color. It is insoluble in water and ether, soluble in alcohol and acetic acid and acetone. (2) A yellow crystalline dye material, which is soluble in warm water, alcohol and ether, giving a yellow colored solution. (3) A lackmus like dye, amorphous and insoluble in alcohol.

These authors showed that these three bodies would be produced in three days by mixing 100 parts of crystallized orcin, 200 ammonia water (22% NH_3) and 1200 of hydrogen dioxide 3%. The violet mass resulting is then acidified with hydrochloric acid, the precipitated orcin is collected and washed with water until no longer acid and then dried at a moderate temperature. On concentrating the filtrate and wash water and adding sodium chloride a second precipitate of orcin can be obtained. On washing the orcin with ether the yellow dye is removed. The orcin is dissolved off the filter by boiling alcohol and there is left on the filter a lackmus like dye material insoluble in alcohol. On evaporating the alcoholic solution of orcin it is obtained as brown crystalline powder. If water be added during the evaporation the orcin is left in glistening flakes.

The method of Zulkowski and Peters with ammonia and hydrogen dioxide was tried on a small scale, using Merck's orcin and the proportion of ingredients as stated. After allowing the mixture to stand for five days, the purple colored mass was solidified with hydrochloric acid and the precipitated orcin washed on to a filter with distilled water and the washing continued until the filtrate was free from acid. The filtrate was still of a bright red color and was washed with several portions of ether, when the latter became a deep orange color and yielded on evaporation a reddish orange residue and this was no doubt the yellow described by these authors. A small portion of this orange residue was soluble in chloroform and the chloroform was colored a distinct yellow not orange, and the residue from evaporation of the chloroform was much lighter in color and had much less tinctorial power. This would indicate that the yellow of these authors was composed of two compounds, the one soluble in chloroform and the other scarcely soluble in chloroform but very soluble in ether and present in relatively large amount.

The chloroform soluble yellow gave with ammonia a lilac-pink, and with hydrochloric acid a light yellow coloration. With alcohol the solution was yellow. It dyed silk in ammoniacal bath only an indistinct faint light pink, and in acid bath a maize yellow. For wool it had little affinity, and failed to dye in alkaline bath and in acid bath only a very pale yellow. The tinctorial value of this yellow was very slight. Owing to the small amount of material obtained the results were not satisfactory.

The orcin orange, the ether soluble yellow, in contradistinction gave orange

¹⁹Monatsh f. Chem. 11, page 227.

colored solutions in water and alcohol. With ammonia it gave a bright violet color, and hydrochloric acid changed this to light scarlet-yellow. The tinctorial strength was very marked. In acid bath it dyed both silk and wool a deep rich mandarin orange, and in ammoniacal solution silk was dyed a salmon pink.

The precipitated *orcein*, after washing free from acid, was dried on the filter and then washed with ether. The ether extracted considerable of the yellow dyes which had been carried down with the orcein and these reacted the same as that obtained from the wash water. The orcein was then extracted by washing the filter with hot alcohol and on evaporation the alcohol solution yielded a glistening residue which gave a red brown powder. There still remained on the filter a very small amount of precipitate not soluble in the alcohol. This gave with alkalis a distinct litmus like blue and with acids a red, and corresponds to the "lackmus like" dye reported by Zulkowski and Peters.

The orcein so obtained was almost insoluble in water and ether, and with alcohol gave a deep carmine red colored solution and in acetone a cherry red. With alkalis it gave a blue-purple and with hydrochloric acid a red coloration. It possessed strong tinctorial properties and dyed silk in acid bath Bordeaux red, and in alkaline bath purple. It dyed wool in acid bath a brownish-red, and in alkaline bath a violet blue.

The wash water from this experiment was still of a deep red color, even after having twice precipitated the orcein and washing with ether to extract the yellows, and showed that it still retained much coloring. It was washed with warm amyl alcohol, which removed nearly all of the coloring, leaving the wash water only slightly colored. The amyl alcohol solution was separated and washed with water to remove dissolved salts, and then evaporated on a water bath. It yielded a copious reddish purple residue. This was soluble in water and more readily in alcohol giving red-purple solutions. With ammonia the solution became intensely purple, and with hydrochloric acid reddish purple. It possessed powerful tinctorial value and dyed silk and wool, either in acid or in alkaline baths, beautiful shades of purple. This dye appears to have escaped the attention of other investigators, although present in considerable quantity, probably because they failed to examine the wash waters. Provisionally we will name it *Orcein purple*.

In order to determine the conditions under which orcein purple is formed and whether the presence of hydrogen dioxide influenced its production, a few test tube experiments were tried. It was learned that orcein in the presence of potassium hydroxide and water yielded largely the yellow dye. In the presence of ammonia in excess, and without any hydrogen dioxide being added, and allowing the oxidation to proceed only two or three days and not to completion, all three dyes, red, yellow, and purple were produced, the yellow and especially the purple exceeding the amount of orcein. Moreover, that the purple dye was soluble in ether when in ammoniacal solution and could be partly recovered in this way even before acidifying and precipitating the red. Excess of ammonia and incomplete oxidation are conditions that are to be expected in the process of manufacturing cudbear. It will be thus seen that orcein is not the only product resulting from the oxidation of orcein. While the blue or lackmus like dye and the yellow readily soluble in chloroform are present in such small quantity that they can probably

be ignored, the orange is present in notable amount and modifies the color of the red with the production of brighter shades. Under certain conditions the orcein purple is produced in quantity sufficient to materially affect the color.

Before taking up the Zulkowski and Peters' paper and process for experimentation, the writer had tried a number of methods for separation of the color materials from cudbear and some of these merit recording. The original thought was to obtain the coloring by precipitation as a lake with a metallic salt. Lead subacetate was found to most completely precipitate the coloring.

Process A—50 gm. of cudbear previously washed with 250 cc. of cold water was treated with successive portions of diluted ammonia water by maceration and the filtered solutions concentrated and solution of lead subacetate added so long as a precipitate was formed. The precipitate was washed by decantation and then on a filter until free from soluble lead salt. It was then suspended in water and a current of hydrogen sulphide passed through until the lead was entirely converted into sulphide. The mixture was then evaporated to dryness and the resulting mass powdered and divided into two equal portions. The one was extracted with warm alcohol and it was attempted to extract the other with diluted ammonia water. It was found, however, that the ammonia water softened the filter paper so that the lead sulphide passed through, and even after repeated evaporations and resolution the lead sulphide persisted in the filtrate. The alcoholic solution from the other half was evaporated and yielded a red powder. The yield was exceedingly small, and the tediousness of this process precludes its recommendation. The residue gave a bright red solution in alcohol, and with ammonia a purple coloration. The alcoholic solution had a peculiar fluorescence. To ether it yielded a yellow dye and from the ether extract water removed traces of a substance which on concentrating the aqueous solution and adding potassium hydroxide gave a pale yellow iridescent liquid with pale green and pink shadings. This was attributed to traces of organic lichen acids, and a similar reaction was obtained from the washings of the cudbear, and from other extractions.

Process B—50 gm. of cudbear was washed as previously directed, mixed with 10 cc. hydrochloric acid, dried and then extracted for 12 hours in a Soxhlet apparatus with alcohol. The extraction even then was not complete. The alcohol was distilled off and the residue evaporated to dryness on the water bath and reduced to powder. It was then of a purple-brown color and weighed 8 gm., equivalent to 16 per cent of the cudbear taken. This will be referred to as extract by acid alcoholic process. Five gm. was purified by washing with water and then with ether, as recommended in the published process. The ether was colored yellow and on evaporation gave the orange yellow dye. Associated with it was a small amount of a violet-red dye that was insoluble in chloroform.

The purified extract was now of a dull red color and weighed 1.75 gm. It gave with alkalis the blue purple coloration and dyed silk and wool the orcein shades. In accordance with the published statement it should be orcein. It was, however, far from pure and, although made by alcoholic extraction, was no longer entirely soluble in alcohol; a portion dissolved readily in alcohol and a smaller amount was very scarcely soluble even in boiling alcohol. This portion dissolved readily in ammonia water yielding a purple solution, but when reprecipitated by the addi-

tion of acid its solubility in alcohol, even in this freshly precipitated state, was not increased. This portion was likewise much weaker in tinctorial value.

Process C—50 gm. of cudbear was washed as in previous processes, then mixed with 25 gm. of ground cork and percolated with a mixture of ammonia water 1 volume, water 3 volumes, until 3500 cc. of percolate was obtained and the cudbear was fairly well extracted although not exhausted. The percolate was concentrated to 500 cc. and sufficient hydrochloric acid (25 cc.) was added to make the solution decidedly acid, then warmed and set aside for 24 hours for the precipitate to settle. The precipitate was collected on a filter and washed till free from acid, then dried and powdered. It yielded a red brown powder, which gave a purple solution with alkalis, and dyed silk in acid bath a light purplish red, corresponding to what is listed by silk manufacturers as crushed strawberry, and in alkaline bath a red violet. This impure orcein we will designate as *Perseo Red*. It is composed of two red coloring substances, one soluble in alcohol with a carmine red solution, the other practically insoluble in alcohol but soluble in ammonia water and the ammoniacal solution on evaporation yields a shining lustrous purple powder, which is insoluble in alcohol, but soluble in diluted alcohol to deep purple red solution. The experience with these red dyes obtained in both processes B and C seems to confirm the statement of Liebermann²⁰ as to the existence of two red dyes produced by oxidation of orcin with ammonia and air.

The filtrate and wash water from the precipitated perseo red was concentrated and extracted with ether, which extracted the yellow dye. Subsequent extraction with amyl alcohol yielded a brownish red solution and on evaporating off the amyl alcohol there remained a lustrous brown powder. This was soluble in water and in alcohol, yielding purple-red solutions, which on the addition of ammonia became a brighter red but not purple. It dyed silk in acid bath a heliotrope, and in alkaline bath an "old-pink" shade.

In attempting to isolate the different coloring matters present in cudbear, either by precipitation or by the use of immiscible solvents, one must recognize the difficulty of their separation in an absolutely pure state. Traces of the associated colorings are almost sure to adhere, and modify the shades produced in dyeing. Nevertheless, there are several well defined and distinct colors which are evidenced in every one of these methods and prove that in cudbear we have to deal with the orcein like reds, a yellow and the purple in varying proportions. The samples of the isolated dyes, colored solutions and dyed silk and wool fibers demonstrate this.

In order to compare the strength of the red dyes obtained in the processes described they were compared with a sample of orcein as supplied by Merck & Co. This orcein was insoluble in water, chloroform, petroleum benzin and benzene. In alcohol it gave a carmine red solution and its solubility in alcohol was increased by the addition of a small amount of ammonia. With methyl alcohol it gave a carmine red solution, with acetone a scarlet, and with amyl alcohol a deep pink. With ether it yielded a pale yellow solution; this filtered off, gave with ammonia a violet, and when acidified with hydrochloric acid was changed to a pink lilac color. It was noticed that on adding more ether, this at first remained

²⁰Ber. d. deutsch. chem. Ges. 7, page 247; 8, page 1649.

colorless but gradually became yellow as if some change was taking place in the presence of that solvent.

Solutions of each of these red dyes were prepared by using .050 gm. of the dye, 5 cc. ammonia water and sufficient diluted alcohol to make 100 cc. The Merck's sample was taken as the standard and for comparison 1 cc. of its solution was diluted to 100 cc. with distilled water. The results were as follows:

Merck's Orcein.....	Solution, clear dark purple.	1 to 100 cc. Standard.
A—Red by Process A, not purified beyond alcoholic extraction.	Solution, clear, lighter red-purple.	5cc. to 100 cc.
B—Purified red by acid extraction	Solution, clear, purple.	2.25 cc. to 100 cc.
C—Perseo Red.....	Solution, clear, deep purple.	3 cc. to 100 cc.
D—Orcein by Zulkowski and Peters' method.....	Solution, clear, deep purple.	.8 cc. to 100 cc. Solution more blue as if trace of litmus present.

On acidifying dilutions of these solutions the red produced was similar to a litmus red, this was somewhat less marked in solution A. Aromatic Elixir colored by these lacked the attractive brightness of cudbear coloring. It was concluded that orcein must have a limited field of usefulness in pharmacy and that it could not displace cudbear with satisfaction.

EXTRACT OF CUDBEAR.

Desiring to obtain a preparation that would represent all of the colorings present in cudbear, extracts were made. Preliminary experiments showed the necessity of washing the cudbear with cold water to remove salts before extraction, if non-hygroscopic and powdered extracts were to be expected, and in these experiments this was always a preparatory act. Alcohol, acetic acid, ammonia water U. S. P., and a mixture of ammonia water 1, water 3, were all used as menstruums, as well as the acid-alcoholic hot extraction previously referred to. It was found that the resulting extracts could be dried and powdered but that they were not freely soluble in alcohol or water, but that with each complete solution could only be effected by the addition of ammonia.

For the comparison of these extracts solutions were made by the following formula: Extract .5 gm., Ammonia Water 5 cc., Diluted Alcohol sufficient to make 100 cc. The tabulated statement exhibits the results. Efforts to compare these with the Army and Raubenheimer Standard Solutions were not satisfactory, and comparison was made by using the dilution of the solution of the alcohol extract as a standard.

Menstruum.	Yield.	Character of Solution.	Amount Required to Match Standard.
Alcohol	8.3%	Solution complete, sediment very little.	1 cc. to 200 cc. Standard.
Acetic Acid.....	11.2%	Poorly soluble and solution not completely effected.	8 cc.
Ammonia Water.....	13%	Solution complete.	3 cc.
Ammonia Water 1, Water 3.....	20%	Solution nearly complete.	2.5 cc.
HCl and Alcohol.....	16%	Solution nearly complete.	4 cc.

Aromatic elixir colored by any of these solutions was distinctly purple but

the red coloring was readily produced by neutralizing with citric acid. The use of an extract of cudbear would very materially reduce the variability in color of preparations in which it was used and it would also be available for the preparation of a more uniform tincture. Acetic acid extract is ruled out on account of its poor solubility and lack of strength. On the score of economy ammonia water extraction appeals but on the basis of strength and reliability alcoholic extraction is to be preferred.

THE DRUG MARKET.

HARRY B. FRENCH.

Senna Leaves.—The United States government is refusing admittance into the United States of what is known as Alexandria Senna Siftings. This is supposed to be the small leaves sifted out in obtaining whole leaf and half leaf garbled. These siftings are very often of good quality, but contain a large portion of sand and other foreign matter. We understand that the Government's limit of foreign matter and succeeded in reducing the percentage of extraneous matter to 9 per cent. was sifted by us. The result was that we eliminated about 25 per cent. of foreign matter and succeeded in reducing the percentage of extraneous matter to 9 per cent. ash. This necessarily makes the price higher to the buyer, but he secures a better article. Ash insoluble in hydrochloric acid less than 1 per cent.

Opium.—Some time ago, we bought in Smyrna, dried opium of high test. This was sold to us as 22 per cent. On arrival we had it carefully tested and had this test corroborated by a prominent chemist in the city and the gum also is tested, at our request, by one of the very large manufacturing chemists in the city. The average result obtained was that the gum tested 20 per cent. U. S. P. Sample was also tested, as a favor to us, by a very prominent pharmaceutical house in the west, and they made the following very interesting report to us:

*"Report on Sample of Dried Opium from Smith, Kline & French Co.
Laboratory No. C-3892.*

"It is well known that there are several sources of error in the U. S. P. Opium assay, and also that other methods are not free from similar sources of error. One of the most fruitful sources of error is the difficulty of completely extracting the Opium and this varies with different samples of Opium, some being much more easily extracted than others. As the morphine is determined by the crystallizing out of a solution, a certain amount will be retained in the mother liquors and this amount will also vary with the character of the Opium. Another source of error is found in the impurities which may be weighed with the Opium, and here again the purity of the morphine is influenced by the character of the Opium. The above facts must be borne in mind by the comparing assays made upon any sample of Opium.

"In order to determine as accurately as possible the morphine content of this Opium, we have made 15 assays; 6 by the U. S. P. method and 9 by other methods. Our results may be summarized as follows:

"Adhering closely to the U. S. P. method, we have found an average morphine content of 20.2 per cent. Applying to these results corrections for the solubility

of morphine in the mother liquors, the average would be raised to about 21 per cent.

"Our average result obtained by other methods, where lime was used in extracting the Opium, was 22.8 per cent morphine. In our opinion, this result is nearer the true morphine content of the Opium than that obtained by the U. S. P. process, but we do not believe that any such result as this can be obtained by the U. S. P. method."

Trouble is apt to arise in buying Opium on test from foreigners unless it is distinctly understood that the only standard that will be accepted will be the U. S. P. test. Whatever results may be given by other tests, the only test of importance to buyers in this country is the test of the U. S. Pharmacopoeia.

Gum Arabic Sorts, which is used in very large quantities, is gathered in the vast district around Khartoum and it has been customary to bring in this gum by the various methods of conveyance that were available to the natives. It was largely transported on the backs of camels and taken to some port of shipment, being delivered chiefly to the Port of Soudan on the Red Sea. The consequence of this method of delivery was that gum was being constantly delivered over a period of many months. A railroad was recently completed from Khartoum to Port Soudan, and this year the gum was shipped from Khartoum by rail. The consequence was that the bulk of the crop of gum was all delivered within a comparatively short time. This was a new experience in the commercial history of the world. The result was that the tremendous deliveries of gum within a short time forced down the price to a lower range than was justified. In previous years the gum would have been arriving at the port of shipment up to the end of July in considerable quantities. As the large deliveries have been absorbed and the later arrivals have been much smaller, for the reasons given above, the price is advancing rapidly.

The early sales of Gum Arabic are apt to be the best. Photographs show the gum, before it is bagged, piled up like large hills. The sand, and fine stuff, which is of little value, is very apt to sift to the bottom, and consequently the first orders are apt to be cleaner than those that are filled later.

Quinine.—After the manufacturers' price had remained at 14 cents in quantity of 100-oz. cans for a number of years, the price was jumped to 16 cents per oz., and shortly afterwards to 19½ cents per oz. These advances were due to decreased shipments from Java, and these decreased shipments resulted in much higher prices being obtained for bark when offered at auction in London, Amsterdam and other quarters. We understand these decreased shipments were not due to any decreased production, but to a combination among the planters to restrict their shipments in order to secure higher prices for the bark. We have a suspicion that in doing this they are acting in conjunction with some of the larger European manufacturers.

It is doubtful whether these higher prices will be permanently maintained, as the shipments have begun to greatly increase and assume even larger proportions than before the recent decrease in the quantities forwarded. It is human nature for a certain percentage of those who may have agreed together to restrict shipments to take advantage of their more honest associates. When these delinquen

cies are discovered the floodgates are loosened and the quantity shipped is largely increased.

Buchu Leaves.—The very high prices prevailing for Buchu Leaves during the last three years constitute a matter for wonder. The production does not seem to be greatly decreased. It is true that the British Government now levies a tax on crown lands where most of the short leaves grow, but this tax constitutes only a small percentage of the advance in the price. The advance must be due to either increased consumption or expert manipulation of prices; possibly both reasons play a part.

We understand that the next U. S. Pharmacopoeia will probably make the long Buchu Leaves official, as well as the short leaf. If, as we have been told, the long leaf is not so valuable medicinally as the short leaf, then the wisdom of such action may be questioned. Owing to the difference in the prices prevailing between the long leaf and the short leaf, some manufacturers are not waiting for the sanction of the Pharmacopoeia, but are turning an honest (?) penny by using the long leaf instead of the short leaf for manufacturing purposes.

Oil of Rose.—The price of Oil of Rose has taken to aviation. The normal price for the best quality was about \$6 to \$7 per oz. The present asking price from abroad for best quality is about \$17 per oz. This latter price, however, is really intended to check buying until it can be ascertained how much Oil of Rose will be produced and at what cost.

For generations the sturdy farmers of Bulgaria sold their rose leaves for 2 cents per pound, and owing to this low cost, the manufacturers of Oil of Rose were able to supply fine quality at low prices. Last year some wicked men, in-oculated with poisonous ideas of benefiting the common people, circulated among the Bulgarians and suggested to them that they could get 4 cents per pound for rose leaves as well as 2 cents per pound. They listened to the suggestion of the serpent and found that they could get the higher price. When people of this character once get the taste of a profit of this kind, it leaves a pleasant flavor and they are apt to bear it always in mind. The consequence is that probably the Bulgarian peasant will always hereafter ask a considerably higher price for his rose leaves than heretofore, and such is the weakness of human nature that he will probably persist in endeavoring to obtain still higher prices.

Because of the good price obtained last year, the amount of roses cultivated was greatly increased. We are told, we do not know with how much truth, because of this increased area that was planted and the consequent despoilation of the best rose bushes for planting, the production of the best bushes for the present year was, to some extent lessened. The last reports are, notwithstanding the increased acreage, the outcome would be not more than last year, and perhaps less. Some time ago Bulgaria had very cold weather and this was followed suddenly by very warm weather. This caused the leaves to fall from the plant. In the meantime, the demand is said to be growing. If extreme prices are reached this article will no doubt be heavily adulterated, and as it is well known, it is an article that is especially susceptible to adulteration. It appeals to men's imagination as an easy road to obtain somebody's else cash. Notwithstanding our advance in moral education over our fathers, still there are a remnant of

us in Israel who are still willing to make use of sharp tricks to increase our returns. For instance, as it is known, celery seed is now selling at a phenomenally high price owing to the short crop of last year. We received recently a report from a correspondent who has headquarters in the principal cities of Europe to the effect that a quantity of celery seed had recently been sold for export to the United States at very high prices, 25 per cent of which celery seed was composed of foreign matter or exhausted seed. But then, the Americans are rich and can afford to pay for such little pleasantries.

In this connection the following extract from the Perfumery and Essential Oil Record of June 26, 1912, is of interest:

"We are now beginning to receive supplies of new season's otto of rose, and we must confess to disappointment at the samples that we have so far received. The following are the characters of the best of the few samples that we have had so far, which, although fairly good, yet unquestionably contained alcohol:

Specific gravity $\frac{300}{15}$	0.8564
Optical Rotation	-C° 30'
Refractive Index	1.4588
Refractive after drying.....	1.4598
Refractive after washing and drying.....	1.4630
Melting point	20-31° C.

"Other samples furnished to us have been of the very poorest character, flagrantly adulterated, some of them to the extent probably of 40 to 45 per cent."

Cod Liver Oil.—This is subject to great variations in price. Some years ago there was a great shortage and manufacturers of established proprietary remedies using Cod Liver Oil paid as high as \$110 per barrel. There is a suit recently instituted in Boston against one of these manufacturers for his refusing to accept delivery on account of a contract for Cod Liver Oil during this period. It was shown that some of the oil was seal oil, much of the so-called Cod Liver Oil was put up in old barrels that formerly contained various kinds of oil, and that much of the oil came from other places than Norway. In other words, the seller was trying to make "hay while the sun shone."

The production this year of Cod Liver Oil has been enormous, about twice as great as in the previous years, and is, we believe, the largest output on record. When oil is quoted at \$14 in Norway, it costs about \$20 here, including the duty. The refiners of oil are seldom willing to sell below \$14 F. O. B. Norway, as they claim they can utilize the oil to better advantage by selling the crude Cod Liver Oil.

SMITH, KLINE AND FRENCH CO., PHILADELPHIA, JUNE 28, 1912.

Papers Presented to Local Branches

CATAPHORESIS OR IONTOPHORESIS.*

F. A. UPSHER SMITH, PH. C.

The separation or splitting up of a chemical substance into its elements by electricity is known as "electrolysis." The application of electrolysis to the art of healing is termed "cataphoresis." The word "cataphoresis" should apply only to medication with the basic ion or kation, and the term "anaphoresis," which has been used for this form of treatment covers both, but is cumbersome to use. "Ionic Medication" is a simpler name, one that is easily understood. It consists in the introduction into the body of suitable medicaments in the ionic state. The substance acted upon is termed the "electrolyte." It must be fluid or semi-fluid and must necessarily be a conductor of electricity. When a substance is electrolysed the products are termed "ions," a name first coined by Faraday.

The ions are electropositive or electronegative. Electropositive ions, or kations, have a strong affinity for and pass to the negative pole of a battery, on the well-established law that "likes repel and unlikes attract." For the same reason the electronegative ions pass to the positive pole of the battery and are termed "anions."

To take a special case, when two electrodes, a carbon plate and a zinc rod are dipped in water acidulated with sulphuric acid, and a copper wire is attached to the ends of the electrodes outside the liquid, a current of electricity is generated, and the water is split up, producing a stream of hydrogen at the negative pole and oxygen at the positive pole. In general, when substances are electrolysed in this way their metallic constituents behave in a similar manner to the hydrogen, and appear at the negative pole, while their acid products, like oxygen, are liberated at the positive pole.

In practice great care must be taken to apply the right pole for the particular purpose. It must not be thought that, because the electric current in a battery passes from the positive pole towards the negative, the medicament must be placed upon the positive pole so as to be carried by the current into the tissues. The truth is that when a substance is electrolysed by being placed on either pole of the battery, it is split up into a positive half and a negative half and these will necessarily pass to poles of opposite sign. The choice as to which should be applied depends upon which part of the medicament we wish to employ. Thus, in treating goitre by this method with potassium iodide, the drug is placed upon the negative pole of the battery. Iodine being an electronegative element it is naturally repelled by the negative pole and passes through the tissues to the positive pole,

*Read at the summer meeting of the Northwestern Branch, at Winona, Minn., June 19, 1912.

and is carried more or less deeply into the tissues, according to the strength of the current (amperage).

The general rule for applying drugs by cataphoresis is as follows: "Place the medicament on the positive pole to utilize the base, on the negative pole to utilize the acid." The positively charged kathions traveling to the negative pole (kathode) include hydrogen, sodium, potassium, lithium, lead, copper, iron, bismuth and the ions of alkaloidal bases. These are all set free at the positive pole and are therefore applied medically at the positive pole (anode).

The negatively charged anions traveling to the positive pole (anode) include most of the metalloids and non-metals and the following groupings: OH, NO₃, ClO₃, C₂H₃O₂, SO₃, C₂O₄, PO₄. These are introduced for medical purposes under the negative pole (kathode).

The anions travel against the current, the kathions with the current. Dr. Neiswanger, an authority on the application of electricity to therapeutics, whose work I have drawn upon in preparing this paper, has said that there is scarcely a condition of disease but that electricity may be used in some form, either as an adjunct or a remedy, and that other remedies, which may not meet the indications as well, are frequently employed because of a lack of knowledge of the therapy of electricity.

The positive and negative poles of a battery have to be used with discretion, as shown by their different behavior, according to the following table:

	Positive Pole	Negative Pole
Reaction	Acid	Alkaline
Action on tissues	(A) Hardens by coagulating albumen.	Softens by liquefaction and disintegration
	(B) An acid caustic forming a hard cicatrix or scar	An alkaline caustic forming a soft cicatrix
	(C) Sedative	Increases sensitiveness
	(D) Hemostatic	Increases bleeding
	(E) Vaso-constrictor	Vaso-dilator

The application of a negative pole by making the tissues alkaline increases inflammation, which is a condition due to excessive alkalinity. When the positive pole is applied the inflammation and pain subside. Hence we see that the negative pole must be used to remove warts and moles, as the action of the negative pole is like that of caustic soda, i. e., softening, disintegrating and liquefying.

Advantages of Ionization. Ointments act, for the most part, superficially—they do not penetrate the deeper tissues so readily as do the ions. Ionization has many advantages, of which we may mention:

1. Easy application.
2. Localization of treatment.
3. Relative painlessness.
4. Activity of the drugs employed, because in the nascent state.

Method of Application. Several thicknesses of absorbent cotton gauze or absorbent cotton are used under the pad, and a fresh solution is used for each sitting.

The quantity of drug that penetrates the tissues is proportional to the magnitude of the current and the duration of the flow.

The solution of the proper strength is applied by means of a disc covered with a thick pad of absorbent cotton or gauze, or by a glass cup electrode. The *active* electrode is covered with a piece of pig's bladder, through which the ions are able to pass. The indifferent electrode is applied in any other convenient situation, either in the hand or on the abdomen or elsewhere.

The solutions are conveniently made of 1 per cent. strength, by dissolving 4.56 grains of the drug in each fluid ounce of distilled water. Among the most useful drugs used in this way are: magnesium sulphate, potassium iodide, sodium salicylate, sodium chloride, quinine acid hydrochloride, copper sulphate and cocaine hydrochloride.

Ionic medication has been successfully employed in alopecia, chloasma (pigmentation), lupus, ringworm, scars and sycosis. A valuable summary of the therapeutic indications of different chemical substances used in cataphoresis is given in Martindale & Westcott's "Extra Pharmacopoeia," from which the following notes are taken. It should be remembered that the drug is carried through the tissues of the patient who is situated between the two poles:

Antiseptics can be introduced to whatever depth may be required.

Cocaine, using a 5 to 10 per cent. solution of the hydrochloride, abolishes sensibility of the skin in 10 minutes. Suitable for minor surgery.

Copper ions have proved effectual in ringworm.

Lithium ions have been used for gout.

Magnesium ions, using a solution of magnesium sulphate, 20 grains to the ounce, have given good effects in multiple warts on the hands.

Mercury. A 1 in 500 solution of mercuric chloride, with the addition of 1 per cent. of sodium chloride is employed.

Morphine. Toxic results can be obtained.

Quinine Acid Hydrochloride. Excellent results have been obtained in trigeminal neuralgia.

Silver. Used in infective cystitis.

Sodium Chloride has a resolving influence on sclerotic and cicatricial formations, applying the kathode to the affected part.

Sodium ions. For the removal of superfluous hairs.

Sodium Salicylate. For neuralgia, sciatica, etc.

Zinc ions. A front rank antiseptic. There is no wound that can not be disinfected by its use. Rodent ulcer has been successfully treated with zinc.

A BRIEF REVIEW OF PROGRESS IN PHARMACY.*

F. A. UPSHER SMITH, PH. C.

Since the introduction of antipyrine in 1882, the therapeutic field has been flooded with thousands of new remedies, of which perhaps less than one per cent. are really valuable and necessary additions. The succeeding years have brought in the following important drugs: 1885, Urethane; 1886, Sulphonal; 1887, Acetanilide and Phenacetin; 1890, Trional; 1899, Aspirin; 1904, Stovaine; 1905, Novocaine. Tuberculin was introduced in 1890. Diphtheria Serum in 1892. A moment's consideration shows that the rapid and enormous multiplication of possible remedial agents has been in one sense a positive detriment to progress, because it has turned the attention of physicians from a limited number of drugs, chiefly vegetable or inorganic and inexpensive, to a legion of new drugs, largely chemical, complex in composition, and expensive to the point of extortion.

A glance through current literature might give the impression that these new synthetics represent recent progress in pharmacy. But a closer study of the subject reveals a very different state of things. The modern physician takes a wider view in his search for remedial agents. He ransacks the whole realm of nature in choosing his armamentarium, using a gas from the atmosphere, an obscure animal gland, a physical force such as electricity, a vegetable ferment, or an emanation from an element like radium, with the same naturalness as when he formerly prescribed the common drugs of the vegetable, mineral and animal kingdoms. For this reason the commentator on modern pharmacy must not limit his attention and interest to the commonly accepted drugs in the materia medica. In attempting a brief review of recent progress in pharmacy it will, therefore, be proper to refer to therapeutic applications and methods, rather than give detailed notes on a few selected remedial agents.

Lactic Ferments are used largely, not only for making buttermilk, but in the treatment of intestinal troubles, rheumatoid arthritis and exophthalmic goitre. They have been used with some success in gonorrhea, dysentery, diarrhea, constipation and a number of other troubles. In fact, they have been *tried* in a more or less empirical way for almost every conceivable disease, including hay fever.

Carbon Dioxide Snow has been introduced as a cauterant. When applied in the form of a pencil to naevi, warts, lupus, etc., it completely destroys the growth, usually in a single application. The process is simple and practically painless. It has been proposed to call this method of treatment cryotherapy, from the Greek word, krymos, Frost.

"606" or *Salvarsan* now seems likely to yield place to the improved form "Neo-Salvarsan," which will soon be on the market. It is stated to be easily soluble in water, forming a neutral solution to which the addition of caustic soda is unnecessary. The dose is larger, 0.9 gm. of Neo-Salvarsan being equal to 0.6 of Salvarsan. It is given by intravenous or intramuscular injection, preferably the for-

*Read at the summer meeting of the Northwestern Branch, at Winona, Minn., June 19, 1912.

mer. Up to March 30, one physician in Germany had tried the new drug on 269 patients with greater toleration than with Salvarsan.

Combreum, the plant so much vaunted a few years ago for the treatment of the opium habit, appears to have lost favor. It is probable that it merely served as a vehicle for the diminishing doses of morphine that were used in the treatment.

Collodion has recently been applied most successfully to the treatment of boils. A ring of collodion is painted around the boil, and the application repeated several times a day. This procedure has been found to exert a gentle and increasing pressure on the boil, which results in its bursting, the core being squeezed out at the same time.

Hormonal, or peristaltic hormone, is being used in the treatment of constipation. Hormones are the substances which give character to internal secretions, and which, on absorption into the blood, influence tissues and organs other than those from which they have been obtained. Specific hormones of physiological importance have been obtained from the testes, ovary, intestinal epithelium, pancreas, thyroid, suprarenals and pituitary body. Hormonal is an extract of the spleen. It came to be used because it was found that normal intestinal peristalsis is produced by a specific hormone which is stored chiefly in the spleen. The adult dose is 15 to 20 cc. by intramuscular injection.

Mercury Succinimide has been very widely tried in tuberculosis, but it would seem to have failed to justify the high hopes that were entertained as to its usefulness.

Hydrogen Peroxide can be ranked among the most useful drugs in the Pharmacopoeia. It has given good results as an injection in gonorrhea and in peritonitis, for the irrigation of sinuses and septic cavities and as a prophylactic gargle against cerebro-meningitis.

Bismuth Gauze is now largely used in place of iodoform gauze. It is odorless, non-toxic, less irritating, less expensive and more efficient. In packing cavities it remains sweet and odorless for many days. It is prepared by mixing 2 ounces of bismuth subnitrate with the same quantity of glycerin, adding gradually two and one-half pints of warm water, and passing about 20 yards of gauze slowly, about three times, through the emulsion.

Epsom Salt, in doses of 1 drachm, two or three times a day, has been found to be a cure for warts.

Oxygen. The inhalation of this gas is of great service in pneumonia, asthma, bronchitis, angina, phthisis, dyspnoea, and asphyxiation by drowning, by smoke or gas. It is a cardiac and respiratory stimulant.

Ergot. Old ideas as to the active constituents of this valuable drug have undergone considerable modification. A water soluble principle has been isolated, which has an action allied to the active principle of the adrenal glands. Chemically speaking it is para-hydroxy-phenyl-ethylaniline. It is found in putrid meat and in placental extract. It can be produced synthetically. It causes the rise in blood pressure and contraction of the uterine muscles characteristic of ergot. Ergotoxine is responsible for the production of gangrene in the cock's comb. The action of ergot on the uterus has also been ascribed to Ergotidine, beta-iminazoyl-

ethylamine. This substance also has been made by synthesis. It causes a lowering of blood pressure.

Chromium Sulphate has given remarkable results in the treatment of enlarged prostate. Cases have been recorded where the patient was able to dispense altogether with the use of a catheter after taking a course of treatment with this drug administered by the mouth.

Sodium Citrate gives very great relief in gastric pain. It interacts with the free hydrochloric acid of the gastric juice, forming sodium chloride and citric acid, in which medium the activity of the digestive enzymes is encouraged. The dose is 15 to 60 grains, in water. It is a beneficial addition to cow's milk in the feeding of infants, preventing the formation of big curds.

Thiosinamin, a substance obtained by the action of ammonia and alcohol on volatile oil of mustard, has secured a position in the newer materia medica. It has a remarkable action in softening scar tissue and removing strictures. Under the name Fibrolysin it is combined with sodium salicylate, in which form it is largely used. For the treatment of external scars, e. g., those following burns, it is applied in the form of mulls. Internally it is given by injection into the veins, muscles or subcutaneous tissue, or by rectal or vaginal injection. One of its most important applications is in urethral strictures, by electrolysis.

Sera and Vaccines. There are now but few diseases for which a serum or a vaccine has not been tried. Promising results have been obtained with a vaccine in the treatment of common cold, also in acne.

Scarlet Red, for medicinal purposes, is the Biebrich Scarlet R, Medicinal, also known as "fat ponceau." It is an entirely different compound from the dye stuff, also known as scarlet red. It is used to regenerate skin by its action in causing proliferation of the epithelium. It is used in the form of a 5 to 8 per cent. ointment. The results are said to be astonishing. Its use has been extended to the treatment of corneal and other ulcers.

Eosin and other fluorescent substances have come into use in the treatment of abscesses, especially in the presence of sunlight. It destroys the bacillus of tetanus.

Sterilization and Desiccation of Medicinal Plants. Bourquelot has been working for some years on the action of enzymes in plants. He has shown that these naturally occurring plant principles are responsible for many changes that take place in drugs during the ordinary process of drying and later in storage. He advises that the drying of drugs should be rapid and thorough in order to preserve the greater part of the active principles more or less intact. When it is desired to know the condition in which the active principles exist in the living plant, recourse must be had to sterilization with boiling alcohol. In the case of some tinctures made from fresh and dried drugs, such as those of aconite, colchicum, cloves and cinchona, a slow but progressive change occurs when these are made with cold alcohol. If the alcohol and drug be heated to boiling for a short time under a reflux condenser such changes will be avoided. A quick and thorough drying preserves the glucosides from hydrolysis in a majority of drugs; in other words, it prevents the enzymes from reacting with the glucosides present.

Massol: A New Pill Excipient. An English pharmacist, Mr. P. B. Phillips, has suggested a new excipient for pills, under the name "Massol." It is made by the following formula:

Gelatin	40 grains
Glycerin	2 drams
Sugar	3 drams
Dist. water enough to make 1 oz.	

Place the gelatin in a tared dish with one-half ounce of water. After an hour add the glycerin and heat on a water bath until solution is effected. Add the sugar and heat until the mass weighs 1 oz. Now beat the mass vigorously with a spatula until it sets and keep in covered jars.

Massol is claimed to be generally useful in making pill masses. It keeps well, and the beating incorporates a lot of air which whitens it, so that white powders can be made into white pills by its use.

The Phthalein Test is now used to determine the efficiency of the renal functions. Its use is described in the "Archives of Internal Medicine" of March 15. The substance used is phenolsulphone-phthalein. It is a bright red crystalline powder, somewhat soluble in water and alcohol and readily soluble in the presence of alkalis. It is non-toxic, non-irritant locally and is excreted almost entirely by the kidneys with great rapidity. In alkaline solution it presents a brilliant red color, which renders it very suitable for quantitative colorimetric determination. It is used in the form of an aqueous solution containing 6 mgm. to the cc, this dose being administered by subcutaneous, intramuscular or intravenous injection. In acid urine the color is yellow or orange. The chemical part of the test is easily and quickly carried out.

SUGGESTIONS FOR THE IMPROVEMENT OF SOME U. S. P. FORMULAE.*

GUSTAV BACHMAN, PH. C., PH. M.

Liquor Potassii Arsenitis. The official directions for this preparation are: Boil the arsenic trioxide and potassium bicarbonate in a tared dish with 100 gm. of water until solution has been effected. Then add enough water to make the solution weigh 970 gm. and lastly add the 30 gm. of Compound Tincture of Lavender.

A person, upon reading these directions and without any further instructions, will naturally select an evaporating dish to carry on the boiling of the salts as directed. The U. S. P. further directs that 100 gm. of water are to be used instead of 100 cc. Why is it necessary to weigh the water, as some of it evaporates in bringing the arsenic trioxide into solution? A flask would be more suitable in preparing this solution. This would lessen the evaporation of water,

*Read at the summer meeting of the Northwestern Branch, at Winona, Minn., June 19, 1912.

and besides, one can readily see when all the arsenic trioxide is in solution, which is impossible when an evaporating dish is used. Again, there seems to be no good reason why the Compound Tincture of Lavender is to be weighed instead of measured, since enough water is finally added to bring the solution up to the desired weight. Even if the official directions for its preparation are carefully followed, a cloudy and unsightly solution is obtained. My experience with this preparation leads me to suggest a change in the formula and also in the directions for its preparation, as follows:

Arsenic Trioxide	10.00 gm.
Potassium Bicarbonate	20.00 gm.
Comp. Tr. Cardamom.....	50.00 cc.
Distilled Water, q. s.	1000.00 gm.

Dissolve the Potassium Bicarbonate in 100 cc. of boiling water contained in a liter flask, then add the Arsenic Trioxide and continue the boiling until solution is effected. Dilute this solution with 500 cc. of distilled water. To this add 50 cc. of Compound Tincture of Cardamom and lastly enough water to make the product weigh 1000 gm. Filter, if necessary.

Liquor Cresolis Compositus. The Pharmacopoeial directions for the preparation of this solution are as follows. Dissolve Potassium Hydroxide in 50 gm. of water in a tared dish, add the Linseed Oil and mix thoroughly. Then add the Cresol and stir until a clear solution is produced, and finally add enough Water to make the finished product weigh 1000 gm.

If these directions are followed it is impossible to make a preparation that will mix with water in any proportion without forming a cloudy, milky solution. This is objectionable and physicians are not prescribing the solution as often as they should. To remedy this difficulty, I suggest to dissolve the potassium hydroxide in 50 cc. of water instead of 50 gm. and to add to this solution the linseed oil, mix well and heat this mixture on a water-bath for one-half hour or until the oil is saponified; that is, until a little of the soft soap added to boiling water dissolves completely without leaving any oil globules floating on the liquid. From here on the directions of the Pharmacopoeia may be followed.

The finished product can be mixed with water in any proportion without forming a milky or cloudy solution.

A recent graduate from the College of Pharmacy of the University of Minnesota has made a reputation both for himself and for his employer among the physicians by making this solution according to the above directions.

Elixir of Iron, Quinine and Strychnine Phosphate. I venture to say that most druggists who follow the directions of the Pharmacopoeia in making this preparation are not satisfied with its manufacture. Many pharmacists have their own formula, simply because they can make it very much quicker, with less trouble than by the official method.

The official directions are to dissolve the alkaloids in the alcohol, then add the Phosphoric Acid and 350 cc. of Aromatic Elixir. The alkaloids are best dissolved in the alcohol by the aid of heat. If the Phosphoric Acid is added directly

to the alcoholic solution of the alkaloids, a thick precipitate is formed which is very difficult to redissolve. If, however, the Phosphoric Acid is mixed with the Aromatic Elixir before being added to the solution of the alkaloids this precipitate is avoided entirely. The further directions of the U. S. P. are to add the Acetic Acid to the Ammonium Carbonate and neutralize with Ammonia Water. The Acetic Acid is directed to be weighed while the Phosphoric Acid is measured. This seems impractical. Then, again, it is a long and tedious operation to get this Ammonium Acetate solution exactly neutral and this is quite unnecessary, as Sodium Citrate, which is nearly neutral in aqueous solutions, will answer the same purposes as Ammonium Acetate in the making of this preparation.

The following formula has been worked out carefully and makes a satisfactory and presentable preparation. This is easily and quickly put together and I believe that more pharmacists will make their own elixir if this formula were used. The suggested formula is as follows:

Soluble Ferric Phosphate.....	17.50 gm.
Quinine (alkaloid)	8.75 gm.
Strychnine (alkaloid)	0.275 gm.
Phosphoric Acid	2.00 cc.
Sodium Citrate	8.00 gm.
Alcohol	60.00 cc.
Distilled Water.	
Aromatic Elixir aa q. s.	1000.00 cc.

Dissolve the alkaloids in the Alcohol with gentle heat; add the solution to the Phosphoric Acid, which has been previously diluted with 375 cc. of Aromatic Elixir. Dissolve the iron salt in 50 cc. of warm water and mix. Add this mixture to the alkaloidal solution gradually with stirring. A precipitate is formed at once, but this readily dissolves upon the further addition of the alkaloidal and iron solution. Finally, add enough Aromatic Elixir to make the product measure 1000 cc. and filter, if necessary.

Glycerite of Starch. The official directions are: Triturate the Starch with the Water until a homogenous mixture is produced. Then gradually add this to the Glycerin contained in a porcelain dish and heated to about 140° C. Continue the heat, with constant stirring, keeping it below 144° C. until a translucent jelly is formed.

I venture to say that nine beginners out of every ten making this preparation for the first time will triturate the starch with the water and then gradually add this paste to the Glycerin, previously heated to about 140° C. with the result that when this starch paste strikes the hot glycerin the starch becomes baked and the resulting lumps can not be worked out into a smooth jelly. I suggest that the directions read thus: Triturate the Starch with the Water, add this paste to the Glycerin gradually and heat the mixture with constant stirring up to 140° C. and keep at this temperature until a translucent jelly is produced.

THE PHARMACEUTICAL LABORATORY OF THE COLLEGE OF PHARMACY, UNIVERSITY OF MINNESOTA.

Section on Scientific Papers

Papers Presented at the Fifty-Ninth Convention

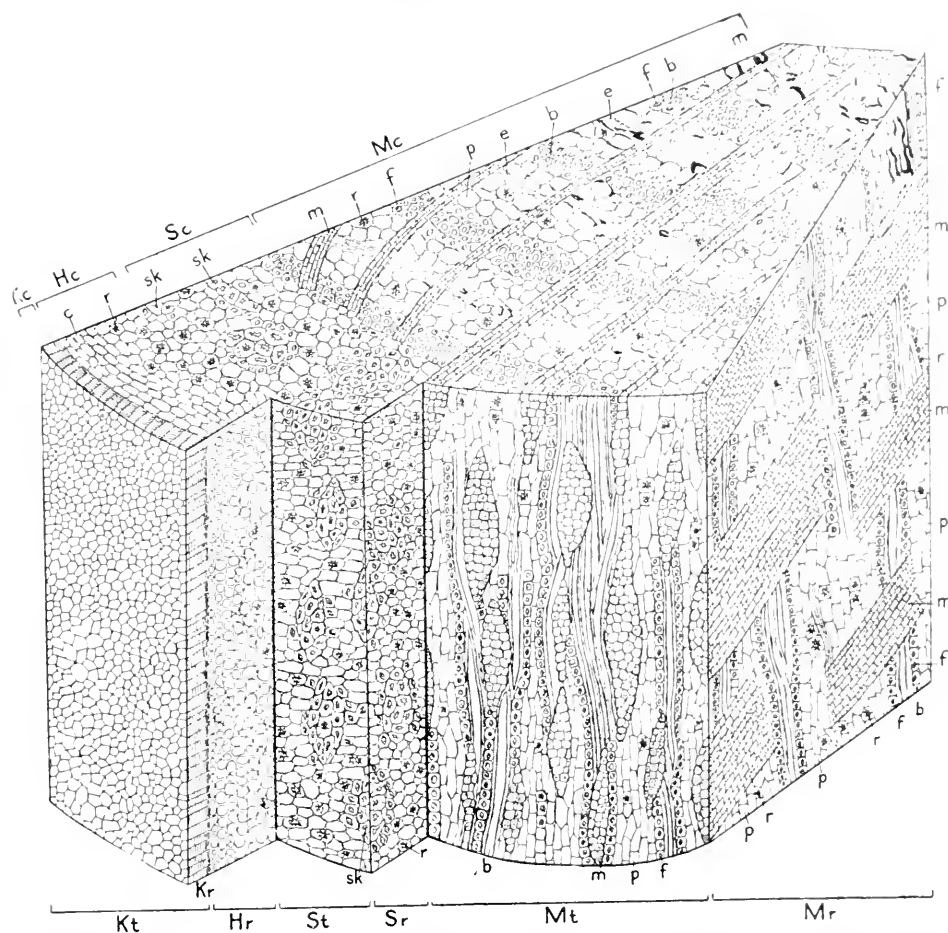
THE MEDULLARY RAY CELLS IN RHAMNUS PURSHIANUS.

HENRY KRAEMER, PH. D.

Pharmacognocists have been under the impression for some years that in the study of the medullary ray cells of more or less closely related drugs characters may be found that are useful in distinguishing between them. As a typical illustration of this point it has been stated that the medullary rays in Jamaica Quassia are from two to five cells wide while in Surinam Quassia they are one or two cells wide. As a matter of fact I have examined specimens of supposed Surinam Quassia, which were probably authentic in that they showed the absence of crystals, yet the number of cells in the width of the medullary rays closely agreed with that of Jamaica Quassia. Again, it is usual to attempt to differentiate between the barks of *Rhamnus Purshianus* and *Rhamnus Californicus* by reason of the apparent difference in the number of cells comprising the width of the medullary rays. I have been inclined to the view and have so expressed myself that the medullary ray cells in *Rhamnus Purshianus* are usually one or two cells wide whereas in *Rhamnus Californicus* they are three to five cells wide.¹ On account of the difficulty of procuring authentic specimens of *R. Californicus* I will not discuss at this time whether there is any actual difference in the number of cells of the medullary rays in these two barks. There is, however, considerable misapprehension on the part of different authorities in regard to the number of cells comprising the width of the medullary rays in *R. Purshianus*. For instance, Moeller² says that the medullary ray cells of *R. Purshianus* are from four to five cells wide, whereas in *R. Frangula* they are two to three cells wide. As a matter of fact these two barks are readily distinguished in powder or in section, by the absence of stone cells in *R. Frangula*. Vogl³ in his commentary on the eighth edition of the Austrian Pharmacopoeia says that the medullary ray cells in *R. Purshianus* are from two to five cells wide, being mostly three cells wide. Karsten and Oltmann⁴ in their *Lehrbuch* say, that the medullary ray cells in *R. Purshianus* are mostly three cells wide, but may occur as many as five cells in width, thus differing materially from *R. Frangula*. In the German Pharmacopoeia it is stated that the light yellow medullary rays of *R. Purshianus* are usually three to five cells wide, and seldom one or two. The Pharmacopoeia Helvetica states that the medullary ray cells of *R. Purshianus* are one to five cells wide.

The reason for these varying statements is probably due to the fact that most of the studies of crude drugs have been carried on with transverse sections. Owing to the interest in the study of powdered drugs in recent years, crude drugs are being examined in longitudinal section, but generally these sections are made

more or less haphazard and are probably mostly of a radial-longitudinal nature. Every student knows that in the study of cells and in the arrangement of tissues three views of them are necessary for a complete understanding of them, and these are obtained by making transverse, radial-longitudinal, and tangential-longitudinal sections. Ordinarily it may not be a matter of great moment as to what kind of longitudinal sections are made. But if a clear idea of the width as well as



The outer bark and part of the inner bark of *Rhamnus Purshianus* in transverse, radial-longitudinal, and tangential-longitudinal sections. **Mc**, transverse section of inner bark; **Mt**, tangential-longitudinal section of inner bark; **Mr**, radial-longitudinal section of inner bark; **Sc**, transverse section of stone cell area; **St**, tangential-longitudinal section of stone cell area; **Sr**, radial-longitudinal section of stone cell area; **Hc**, transverse section of outer layers of cortex; **Hl**, radial-longitudinal section of outer layers of cortex; **Kc**, **Kt**, **Kr**, transverse, tangential-longitudinal, and radial-longitudinal sections of cork.
b, bast fibers; f, crystal fibers; p, parenchyma; l, sieve; sk, stone cells; m, medullary ray cells; c, collenchyma.

height of the number of cells comprising the medullary rays is to be ascertained it is absolutely necessary to examine tangential-longitudinal sections, in fact sections of this character are alone necessary, particularly when made of the tissues in the vicinity of the cambium. In this view the medullary ray cells occur in more or less bi-convex groups of a limited number of cells, extending more or less scattered throughout the tissues of the collateral and bicollateral fibro-vascular

bundles. It should be emphasized that these sections must be made in the area lying between the pith on the inside and the primary cortex on the outside. That is, in the bark, the sections must be made in the inner bark, because the medullary ray cells of the bark are included only in the phloem and this area does not usually extend throughout the width of the bark.

Coming to the drug which has been studied in order to illustrate this paper, it will be seen from an examination of the several sections, namely transverse, radial-longitudinal, and tangential-longitudinal, why there are these discrepancies throughout the literature in regard to the number of cells comprising the width of the medullary rays. This is especially brought out if these views are connected in a single drawing such as illustrates this paper. This illustration brings out clearly the relative position and arrangement of the tissues in the bark and one sees how in the different sections different views are presented, none of which has a meaning without the others. The following points are to be observed:

1. That the medullary ray cells occur only within the tissues of the inner bark, that is, in those inside of the primary cortex.
2. That, in the transverse section the medullary rays appear as somewhat straight or curved lines, one to four cells in width.
3. That, in tangential-longitudinal section these occur in more or less biconvex groups. At both ends of these groups we usually find a single cell. As the convex area widens we find two cells side by side and then near the middle it may be three or four cells in width. I do not recall having seen as many as five cells side by side in the middle of these bi-convex groups. Some of the narrowed bi-convex areas may not be more than two cells in width.
4. That, in comparing the tangential-longitudinal section with the transverse section, the variation in the width of the rays becomes at once intelligible.
5. That, where the rays are one cell wide in transverse section either a very narrow bi-convex group has been cut across or the section has been made across the end of a broad group.
6. That, when the ray in transverse section is three or four cells wide, the section has been made through the middle of a broad bi-convex group.
7. That, in the radial-longitudinal section the medullary rays appear as a series of parallel lines, the number of cells in height depending on what part of the rays have been cut, and only if the section is made vertically through the middle of a group do we observe the maximum number of cells. The radial-longitudinal section, therefore, does not provide any additional information.

Probably sufficient has been said, in addition to the illustration here presented, to show the importance of the examination of tangential sections when studying medullary rays. This is important not only when attempting to find differences in closely related species of commercial varieties of drugs, but it is absolutely necessary in describing accurately the tissue which lies between the collateral and bicollateral bundles. When studies of this kind are made as, for instance, in the rhizome of *cimicifuga* it is almost immediately observed that the cells between the collateral bundles are not of the type of medullary rays, and again in the study of drugs like cinnamon and cinchona where in transverse section, in some cases at least, the medullary ray cells are more or less indistinct, they are almost immediately determined when tangential sections are made.

The medullary rays are of such a definite character in that they occur in more or less bi-convex groups when seen in tangential view that only a very few tangential-longitudinal sections are necessary to bring out the number of cells which make up their width or height.

In conclusion one other observation of interest may be mentioned and that is that the medullary ray cells near the cambium have a tangential diameter usually

much narrower compared with those found in the region near the cortex. For instance, the width of a medullary ray cell near the cambium will be about 0.010 mm., while the width of the cell in the same ray near the cortex will be 0.020 mm.

REFERENCES TO LITERATURE.

1. A Text-Book of Botany and Pharmacognosy. Fourth Edition. By Henry Kraemer. P. 524.
2. J. Moeller. *Pharm. Post*, 1890 (23), p. 237.
3. Kommentar zur achten Ausgabe der Österreichischen Pharmakopoe. By August v. Vogl. 2te Band. 1908. P. 282.
4. Lehrbuch der Pharmakognosie, by George Karsten and Friedrich Oltmans. 2te Auflage. 1909. P. 133.

Date.

THE CRYSTALLINE ALKALOID OF CALYCANTHUS GLAUCUS.

(Fourth Paper.)

SOME SALTS OF A NEW QUATERNARY BASE OBTAINED BY METHYLATION OF ISOCALYCANTHINE.

H. M. GORDIN.

It was shown in the last paper on this subject¹ that anhydrous isocalycanthine has the formula $C_{11}H_{14}N_2$, and that when recrystallized from a mixture of acetone and water it contains some water of crystallization the exact amount of which is difficult to determine, owing to the extreme slowness with which this water is given off. When the alkaloid is kept in vacuo over sulphuric acid, the loss of the water of crystallization is at first quite fast, but very soon slackens down to such an extent that it can be observed only when working with considerable quantities and weighing every month or two. I have now been keeping 1.9862 gm. of the alkaloid in vacuo over sulphuric acid for about twenty months. So far the loss amounts to 0.0894 gm. and the weight has not changed within the last two months. Supposing there will be no further loss, the amount of water of crystallization found would be 4.5 per cent, corresponding to half a molecule H_2O .

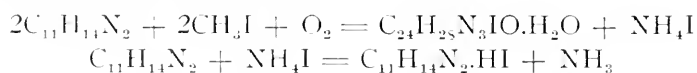
Calculated for $C_{11}H_{14}N_2 \cdot \frac{1}{2}H_2O$, 4.92 per cent. H_2O .

It was also shown in that paper that besides a CH_3N group, isocalycanthine contains an NH group, since when treated with nitrous acid, it given an insoluble nitrosamine. It was therefore expected that it would react with one molecule of methyl iodide to form a tertiary methylisocalycanthine of the formula $C_{11}H_{13}(CH_3)N_2$, and with two molecules of methyl iodide to form a neutral quaternary methiodide of the formula $C_{11}H_{13}(CH_3)_2N_2 \cdot CH_3I$. A large number of experiments showed, however, that whether the methyl iodide is in excess or the alkaloid is in excess, whether the reaction takes place in the cold or at 100° under pressure, in no case is either of the expected substances formed. Under all conditions so far tried the reaction products are as follows: About 35 per cent of the isocalycanthine taken takes no part in the reaction, and can be recovered unchanged; about 35 per cent of the iso calycanthine is converted into its hydriodide, while the rest is transformed into a new quaternary iodide having the entirely unexpected formula

¹J. Am. Chem. Soc., 31, 1305.

$C_{24}H_{28}N_3IO \cdot H_2O$. The relative quantities of these substances were determined by the following procedure. The whole of the reaction product, obtained after evaporating the methyl alcohol and the excess of methyl iodide to dryness, as described below, was taken up with dilute acetic acid (about 6%). The acid easily dissolves the unchanged isocalycanthine, but takes up only a small amount of the isocalycanthine hydriodide produced in the reaction, and still less of the new quaternary iodide which is very difficultly soluble in water or weak acids. From the acid solution the free unchanged isocalycanthine was obtained by precipitation with ammonia. From 10 gm. isocalycanthine taken about 3.5 gm. were recovered unchanged. The residue left after the treatment with the acetic acid was rubbed up with concentrated ammonia, which liberates the isocalycanthine left after the second treatment with acetic acid consisted of the new quaternary iodide. After standing over night, the ammoniacal liquid was sucked off, the residue washed with a little water, and then again treated with dilute acetic acid. In the new acid filtrate the free isocalycanthine was again precipitated with ammonia, yielding about 3.5 gm. isocalycanthine coming from its hydriodide. The residue left after the second treatment with acetic acid consisted of the new quaternary iodide. From 10 gm. isocalycanthine about 4 gm. quaternary iodide were obtained.

It is difficult to explain how from an oxygen-free base containing two atoms of nitrogen in the molecule, a quaternary oxygen-containing iodide is produced with three atoms of nitrogen in the molecule. It may be that the reaction consists not in a simple methylation, but that the methylation is accompanied by an elimination of an atom of nitrogen as ammonium iodide from two molecules of isocalycanthine under the combined action of the methyl iodide and the oxygen of the air, and that the large excess of free isocalycanthine drives out ammonia from the ammonium iodide, giving isocalycanthine hydriodide. The reaction could then be represented by the following two equations:



An indication of formation of ammonia in the reaction was obtained by placing under the stopper of the flask in which the reaction took place a strip of moistened red litmus paper. After 24 hours' standing the paper turned decidedly blue. On the other hand, the amount of isocalycanthine hydriodide produced seems to be in excess of what might be expected considering the amount of quaternary iodide formed. But this discrepancy may be due to the difficulty of quantitatively separating the two substances from each other. The quaternary iodide being considerably less soluble in presence of ammonia than in neutral or acid liquids, undoubtedly dissolves to an appreciable extent together with the free isocalycanthine in the dilute acetic acid, and is then precipitated by the ammonia together with the free base. The amount found of quaternary iodide is therefore less, while that of isocalycanthine hydriodide, is more than is actually formed in the reaction.

The identity of isocalycanthine recovered from the reaction products, after purification by solution in acidified water, precipitation with ammonia and recrystallization from a mixture of acetone and water, was established by the melting point, optical rotation and the formation of an insoluble nitrosamine.

That none of the expected tertiary methylisocalycanthine is produced in the reaction is shown by the fact that from the acetic acid solution of the free base isolated from the reaction products, nitrous acid quantitatively precipitates the base as a nitrosamine. In the filtrate from the nitrosamine no basic substance could be detected by the usual alkaloidal reagents.

That the new reaction product is really a quaternary iodide, not a salt of a tertiary or secondary base, is shown by the fact that ammonia, fixed alkalies and alkaline carbonates simply diminish its solubility in water, but do not precipitate any free base with the removal of hydriodic acid, and that nitrites in neutral solution give a rather difficultly soluble crystalline nitrite, while in acid solution no insoluble nitrosamine is formed.

The new quaternary iodide is both a neutral ammonium salt and a very weak monoacid tertiary base. Itself perfectly colorless and extremely difficultly soluble in water, it is capable of combining with strong acids to form much more easily soluble salts of a fine yellow color. From the solutions of such salts ammonia, fixed alkalies and alkaline carbonates reprecipitate the colorless quaternary iodide. By means of silver chloride the quaternary iodide can be changed to the corresponding quaternary chloride. The latter is quite soluble in water, and can be used for the preparation of other salts of the quaternary hydroxide underlying the quaternary iodide. All of these salts are colorless, except those with colored acids, like picric and picrolonic. They are all capable of combining with strong acids to form much more easily soluble salts of a fine yellow color. The amount of acid taken up by these quaternary salts can be exactly determined by titration with standard alkali, using as end point the disappearance of the yellow color. Further addition of alkali has no effect upon them. They all have a neutral reaction towards indicators, do not combine with weak acids, like acetic, do not react with nitrous acid and do not combine with methyl iodide, though they undoubtedly contain a tertiary nitrogen atom.

Attempts to corroborate the secondary nature of isocalycanthine by acting upon it with ethyl iodide, amyl iodide, benzyl iodide, orthoxylylene dibromide and benzenesulphochloride, were fruitless. In all cases the free base was quantitatively recovered unchanged.

The quaternary iodide or chloride can be changed by means of silver oxide to the corresponding free ammonium hydroxide. The hydroxide has a strong alkaline reaction and absorbs carbon dioxide eagerly. It could not therefore be prepared in pure condition. On heating the hydroxide to about 200°-220° in a current of carbon dioxide, it decomposes into two new substances, one of which is soluble, the other insoluble in dilute hydrochloric acid. These will be investigated later.

EXPERIMENTAL.

Having determined the exact nature of the reaction between isocalycanthine and methyl iodide, as described above, the best method for making the new quaternary iodide was found to be as follows:

Ten gm. crystallized isocalycanthine are boiled under reflux condenser with a mixture of 20 gm. methyl iodide and 30 cc. methyl alcohol for about 20 minutes.

The alkaloid quickly dissolves in the warm liquid, but very soon heavy crystals begin to separate out, and the boiling mixture begins to bump so violently that it is liable to be thrown out through the condenser. The flask is then detached from the condenser, cooled, stoppered and set aside for four or five days. A large amount of a mixture of white and yellowish heavy crystals separates out, firmly adhering to the sides and bottom of the flask. The supernatant liquid is poured off into a shallow evaporating dish, and evaporated to dryness at ordinary temperature in a good current of air. The crystals in the flask are now added to the residue in the evaporating dish, and the whole rubbed up with about 20 cc. of concentrated ammonia. The solid material is now almost perfectly white. After standing under cover for 24 hours, the ammoniacal liquid is sucked off, and the crystalline mass washed with water till the washings are free of ammonia. The mass is digested for a few hours with about 70 cc. dilute acetic acid (6%), and the acid liquid again sucked off, washing the crystals till the washings are neutral. In the acid filtrate the isocalycanthine is precipitated with ammonia, yielding about 6 gm. of free alkaloid. The new quaternary iodide left after the treatment with acid and amounting to about 4 gm. is recrystallized twice from methyl alcohol and dried at 30° for about 6 hours. Thus obtained the quaternary iodide forms snow white, light soft, glittering flat needles, insoluble in benzine, ether or chloroform, very difficultly soluble in water, a little more soluble in alcohol. Of hot methyl alcohol it requires about 30 parts for solution. It turns yellow on prolonged exposure to the air. It also becomes deep yellow upon addition of strong acids, but the color disappears again upon addition of ammonia, fixed alkali or alkaline carbonates. It contains one molecule of water of crystallization which it gives off in vacuo over sulphuric acid. Hydrated it turns brown at 213-14°, assuming a pasty consistence, but does not melt even at 265°. Anhydrous it turns darker and darker when heated, but does not melt even at 325° (on Bloc Maquenne).

The hydrated salt contained 4 per cent H_2O .

Calculated for $C_{24}H_{28}N_3IO \cdot H_2O$, 3.47 per cent H_2O .

The analysis of the anhydrous salt gave: I, 25.52 per cent; N, 8.49 per cent; C, 57.21 per cent; H, 5.96 per cent.

Calculated for $C_{24}H_{28}N_3IO$: I, 25.32; N, 8.39; C, 57.46; H, 5.63.

0.1632 gm. of the anhydrous salt dissolved in 100 cc. methyl alcohol (Merck's pro analysis and redistilled) gave in 200 mm. tube at 23.5° a rotation of 0.62°. Hence $[d]_D^{23.5} = 189.95$.

HYDRIODIDE OF THE QUATERNARY IODIDE, $C_{24}H_{28}N_3IO \cdot HI \cdot H_2O$.

Three gm. quaternary iodide and 4 gm. potassium iodide are dissolved with the aid of heat in a mixture of 10 cc. methyl alcohol and 10 cc. dilute hydrochloric acid about 10%). After standing for 24 hours the crystals which separate out are washed with a little water and dried at about 40°. Flat, bright yellow, silky needles, difficultly soluble in cold solvents, easily soluble in hot water or hot alcohol, insoluble in ether or chloroform. It gradually turns brown when heated, but does not melt even at 325°. The water of crystallization is given off in vacuo over sulphuric acid.

The hydrated salt contained 3.32 per cent H_2O .

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{IO} \cdot 3\text{H}_2\text{O}$, 2.8 per cent H_2O .

The anhydrous salt contained 40.30 per cent, total I.

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{IO} \cdot \text{H}$, 40.35 per cent I.

QUATERNARY CHLORIDE, $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO} \cdot 3\text{H}_2\text{O}$.

Fifteen gm. quaternary iodide are shaken with an excess of freshly prepared silver chloride and about 300 cc. very dilute hydrochloric acid (about 1.5%) for half an hour and the liquid filtered. The clear deep yellow filtrate is made strongly alkaline with ammonia, which discharges the color immediately, and evaporated to a small bulk. On cooling the whole mass solidifies to a crystalline cake. After washing with a little water, the quaternary chloride is dissolved in methyl alcohol and the solution covered with ether. The crystals which separate out after 24 hours are dried at about 35° . Snow white, glittering, flat needles, easily soluble in methyl alcohol or hot water. Of cold water the salt requires about 50 parts for solution. It turns brown at 214° and melts to dark liquid at 220° . With gold chloride in presence of sodium carbonate it gives the same intense color reaction as calycanthaine², but the violet color is not so prompt to make its appearance. The water of crystallization is given off in vacuo over sulphuric acid. The anhydrous salt is very hygroscopic.

The hydrated salt contained 10.75 per cent, H_2O .

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO} \cdot 3\text{H}_2\text{O}$, 11.01 per cent, H_2O .

The anhydrous salt contained 8.82 per cent, Cl.

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO}$, 8.65 per cent, Cl.

0.2705 gm. of the anhydrous salt dissolved in 50 cc. water gave in 200 mm. tube at 24° a rotation of 2.67° . Hence $[\text{d}]_D^{24} = 246.76$.

HYDROCHLORIDE OF THE QUATERNARY CHLORIDE, $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO} \cdot \text{HCl}$.

This salt is obtained by dissolving the neutral quaternary chloride in a mixture of methyl alcohol and a little concentrated hydrochloric acid, and covering the solution with ether. It is recrystallized from methyl alcohol covered with ether. Yellow microscopic needles, extremely easily soluble in methyl alcohol, quite soluble in water, but insoluble in ether or chloroform. Dried in the air it turns greenish at 155° . On further heating it becomes pasty, but does not melt to a liquid even at 250° . For the determination of HCl and total Cl it was dried in vacuo over sulphuric acid.

0.1523 gm. dissolved in 75 cc. water and titrated with 0.1 N KOH to disappearance of yellow color required 3.4 cc. for neutralization.

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO} \cdot \text{HCl}$, 3.4 cc. 0.1 N KOH.

The salt contained 16.17 per cent, total Cl.

Calculated for $\text{C}_{24}\text{H}_{28}\text{N}_3\text{ClO} \cdot \text{HCl}$, 15.89 per cent, total Cl.

Attempts to prepare chloroplatinates and chloraurates of the quaternary chloride were not successful. Neither in acid nor in neutral solutions could salts of definite composition be obtained. The precipitates obtained by adding platinum tetrachloride or gold chloride to solutions of the quaternary chloride had a tendency to pass through the filter, and their color varied with the slightest change in

the conditions of preparation. The platinum salt examined under the microscope consisted of a mixture of crystals and amorphous masses.

QUATENARY NITRATE, $C_{24}H_{28}N_3O.NO_3$.

The salt is prepared by dissolving the quaternary chloride in hot water and adding a saturated solution of potassium nitrate in water. It is recrystallized from boiling water and dried in vacuo over sulphuric acid. Snow white rectangular prisms, difficultly soluble in cold water, quite soluble in methyl alcohol and hot water. It turns yellowish at 190° and melts at 192-94° to a reddish liquid.

Analysis gave: C, 65.60 per cent; H, 6.22 per cent.

Calculated for $C_{24}H_{28}N_3O.NO_3$; C, 66.02; H, 6.47.

QUATENARY PICRATE, $C_{24}H_{28}N_3O.C_6H_2N_2O$.

The salt is prepared by dissolving 2 gm. of quaternary chloride in 500 cc. hot water and adding an excess of a hot solution of sodium picrate containing some free sodium carbonate. It is recrystallized from boiling water containing a little sodium carbonate and dried in vacuo. Soft, orange-yellow, oblong plates, difficultly soluble in all solvents. It turns reddish at 145° and melts at 155°.

It contained 13.96 per cent N.

Calculated for $C_{24}H_{28}N_3O.C_6H_2N_2O$, 13.96.

QUATENARY PICROLOXONATE, $C_{24}H_{28}N_3O.C_7H_7N_3O_5$.

The salt is prepared as follows: Sodium carbonate and picronic acid, one gm. each, are dissolved in 800 cc. warm water, and the solution set aside over night in a cool place. The liquid is filtered, and to the filtrate, heated nearly to boiling, is added a solution of one gm. quaternary chloride in 200 cc. hot water. The salt is recrystallized from boiling water, of which it requires about 2000 cc. for solution. Bright orange colored microscopic needles, very difficultly soluble in all solvents. Air dried it melts at 164-66° to thick liquid. For the estimation of N it was dried in vacuo.

The salt contained 15.86 per cent N.

Calculated for above formula, 15.38.

The investigation is to be continued.

NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY.

CALCIUM HYDROXIDE.

A Plea For Its Introduction Into the U. S. P.

PHILIP ASHER, PH. G.

The official method of making lime water is simple enough, and the principal question of interest is its only constituent, the lime, and which has caused an endless amount of unnecessary worry to those who have to make this solution.

The first difficulty the retailer meets is in obtaining lime of good quality.

Often lime is obtained which is difficult to slake, or, after having had it for a short time, one finds it has become air slaked and naturally it is thrown out.

The city druggist often experiences trouble in getting lime of good quality, and this difficulty is still greater in the country.

A common but highly erroneous practice is to slake lime in a demijohn, add water to it, and decant the clear solution when needed, adding water to the residue from time to time without limit.

Any intelligent pharmacist should know that a solution of calcium hydroxide absorbs carbon dioxide, forming the insoluble calcium carbonate. This notion that as long as there is a residue remaining it is calcium hydroxide is far more prevalent than one may believe and the writer has heard such a theory propounded from the lecture platform. While chairman of the Committee on Adulteration of the Louisiana State Pharmaceutical Association, 85 samples of lime water were examined, among which were some consisting of nothing but water, and strange as it may appear one of these was furnished by a member of the Board of Pharmacy.

It is seldom one meets with lime water containing an excess of alkali, but in the investigation above mentioned several such cases were observed, being due to improper washing.

Even were lime worth as much as 25 cents per pound and the full official amount were used a gallon of it would not cost half a cent, so that the charge of intentional cheapening could never be made against anyone. As an article of domestic consumption it is very important, and the pharmacist who supplies an inferior article is criminally negligent.

The writer undertook a series of investigations regarding the rate of the deterioration of lime and was surprised at the results.

That lime when exposed to the atmosphere absorbs carbon dioxide and water is correct, but the rate of such changes is not as rapid as generally believed. If a purified calcium hydroxide were introduced into the U. S. P. the pharmacist would have at his command the material with which to make lime water and without the necessity of washing.

On November 19, 1910, these experiments were begun:

"A"—Lime slaked, dried until it no longer lost weight, and placed in a 4 ounce, wide-mouth bottle, stoppered with an ordinary cork.

"B"—Same as "A," but kept in an open 4 ounce beaker and exposed to atmosphere.

"C"—Sufficient water was added to slake the lime and kept under same conditions as "A."

"D"—Same as "C," but kept exposed.

"E"—Lime placed in 4 ounce uncovered beaker and allowed to become air-slaked.

"F"—A preparation known as "lime opura," consisting of slaked lime. This was over six years old at the beginning of these experiments and was kept during that period in an ordinary cardboard box, and after the experiments were started was exposed to the atmosphere.

The following table shows the progressive changes.

Under "E" the reading is in terms of oxide instead of hydroxide.

It will be observed that the changes in the exposed samples during the first month were gradual, after which there was a decided drop, the latter occurring during the rainy spell, but since that time it has become almost stationary.

Date	A % Ca(OH) ₂	B % Ca(OH) ₂	C % Ca(OH) ₂	D % Ca(OH) ₂	E % CaO	F % Ca(OH) ₂
November 19, 1910.....	88.51		88.25			
November 21, 1910.....	87.5	84.09	86.6	83.		
November 24, 1910.....	86.8	78.	86.5	78.	78.88	77.5
December 3, 1910.....	86.5	76.5	86.5	70.25	65.98	76.9
December 10, 1910.....	86.45	75.4	86.5	70.15	65.95	76.8
December 17, 1910.....	86.43	74.29	86.44	69.8	65.95	75.4
January 1, 1911.....	83.4	28.75	86.44	37.44	52.61	38.37
February 11, 1911.....	83.35	28.47	86.44	35.30	46.76	37.42
March 4, 1911.....	83.29	27.95	86.43	33.10	45.65	37.25
May 4, 1911.....	83.22	20.96	86.43	32.53	45.58	37.08
July 11, 1911.....	83.12		86.43	30.89	41.20	36.41

The results under "A" and "C" are of the greatest interest to the pharmacist, showing that with no other precaution than to cork the bottle the changes in nearly eight months were from 88.51% to 83.12% in "A" and from 88.25% to 86.43% in "B," or a difference of 6.3% in the former and 2.5% in the latter.

The above results also disclose the fact that even slaked lime could be used, provided an increased amount has been taken and which could be shown to contain hydroxide by a drop of phenolphthalein solution.

A purified calcium hydroxide could be made by the average retail druggist, but the chemical and pharmaceutical houses are better equipped for such work and it could be marketed at a very reasonable figure.

DISCUSSION.

CHARLES H. LAWALL: "I have frequently observed that milk of lime does not deteriorate as rapidly as commonly supposed if kept under common sense conditions. I am glad that Dr. Asher has made the tests that he did."

F. R. ELPRED: "There have been many elaborate schemes proposed for the keeping of lime water, such as siphons and similar arrangements. Some time ago I made several experiments as to the rate of deterioration of calcium hydroxide in solution. One was the keeping of a gallon of lime water with an excess of calcium hydroxide, the bottle being stoppered with an ordinary cork. Once a week the bottle was uncorked and two ounces poured out, without shaking, until only about two ounces of solution remained above the lime. The liquid remained saturated all the time.

"Another gallon bottle of the solution was kept with simply a paper cover to exclude dust, and every week a portion was removed by means of a pipette and titrated. While the liquid did not remain absolutely saturated it was above the pharmacopœial requirement at all times."

IMPROVEMENT IN THE TECHNIQUE OF SAMPLING URINE FOR MICROSCOPIC EXAMINATION.

G. H. MEEKER, PHAR. D., LL. D.

Let it be assumed, for the purpose of illustration, that an adult male will void about 250 cc. of urine each time he empties his bladder; that the total volume of his urine in twenty-four (24) hours is about 1500 cc., and that the clinician will

take as the sample for examination either the volume voided at a certain time or the total volume voided in a day. In both cases only a *single drop* is placed upon the microscope slide. This drop will measure about 1, 20 cc. Under the foregoing circumstances, the microscope slide contains only ($1, 250 \times 20$ or $1, 1500 \times 20 = 1, 5000$ or $1/30,000$) one five-thousandth or one thirty-thousandth of the whole urine sample. These figures will, of course, vary according to circumstances, but they serve to compel the conclusion that if the drop examined micro-

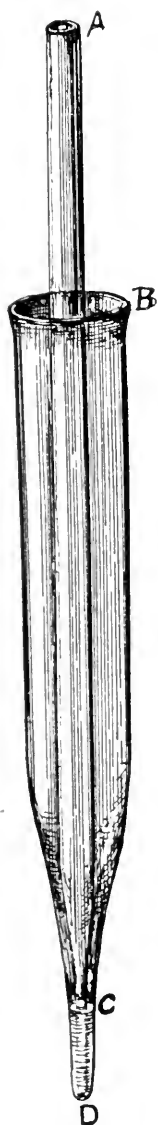
scopically is to contain representatives of all solid particles in the main sample, then said drop must be obtained by a definite, intelligent procedure. The chance for error is reduced as we multiply the number of drops examined by the microscope; but the mere multiplication of examinations is both laborious and unintelligent. If we allow the urine to stand at rest until the particles subside, and then examine the subsided particles, we still further reduce the chance for error; but such a long time is required for complete subsidence of large samples of urine that the delays and fermentative changes encountered in this procedure become objectionable. Mere sedimentation by gravity has therefore given way largely to sedimentation by the centrifuge. The centrifuge gives results quickly and without the objectionable fermentation. We find some clinicians, however, who insist that the centrifuge does not effect sedimentation as perfectly as does gravity; and who refuse for this reason to abandon the gravity method.

I will now describe a procedure for the sampling of urine for microscopic examination, which is rational and which through long and satisfactory use in my laboratory has been approved by experience.

THE PROCEDURE.

Shake the sample so as to make it homogeneous. Take two conical centrifuge tubes, each having a capacity of about 20 cc. Label the tubes "a" and "b." Into each tube put about 15 cc. urine. With the contents of "b" mix one drop of a one per cent solution of ammonia alum, followed by a drop or two of ammonia water, if necessary, to produce a faint alkalinity. Now rotate both tubes until sedimentation appears to be complete. Remove the tubes from the centrifuge and pour off the clear liquid. Next introduce a small, pointed pipette into the sediment, as shown in the illustration, and blow gently through the sediment. Using the pipette, transfer a drop of the turbid material to a slide. Again mix the sediment by blowing through the pipette and again prepare a slide. We now have four slides—two from "a" and two from "b." To "a" now add one drop of any staining fluid desired,

and to "b" add a drop or two of an acidified staining liquid, or enough to dissolve the earthy phosphates and aluminum hydroxide present. Having allowed sufficient time for the staining action, prepare four more slides as described above. A cursory examination of the eight slides with the $\frac{2}{3}$ " objective and a more detailed



examination of one or two of the slides under the $\frac{1}{8}$ " objective completes the study.

A few explanations follow: The two 15 cc. samples taken from the well-shaken urine are each fully large enough to include, in correct proportion, all of the kinds of suspended solids in the main specimen. The use of the alum in alkaline solution insures the formation of a coagulum which entangles and precipitates all morphologic elements of the urine and checks the findings in test tube "a." The sediment must be mixed before taking the drop upon the slide because the solids do not settle uniformly. The illustration, Fig. 4, shows one of the centrifuge tubes ready for taking away the drop for microscopic examination—AD is the pipette; BD is the centrifuge tube; and CD is the sediment with accompanying liquid.

THE DETERMINATION OF THE CHEMICAL REACTION OF URINE.

G. H. MEEKER, PHAR. D., LL. D.

One having but little experience with the use of litmus paper in determining the chemical reaction of urine would think that no test upon the urine could be more simple in performance or more certain in its results. As a matter of fact, however, there are many fallacies in this apparently simple test. The fallacies arise mainly from the use of dry litmus paper and from the oftentimes faintness in the change of tint. The eye needs a control color-guide in order to render the results certain. I have for several years been employing, with much satisfaction, the following procedure, in which I believe the chances for erroneous results have been eliminated:

HOW TO CONDUCT THE TEST.

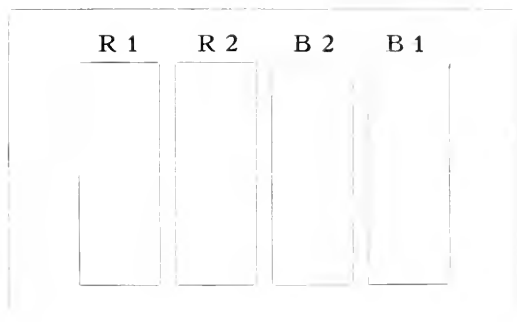
Half fill a small beaker with urine. Lay a clean white tile (or any other clean glazed surface) upon the table near the beaker. Take up two slips of red litmus paper—which for clearness in description we will call R 1 and R 2. Wet both slips of red litmus paper with neutral water. Lay R 1 upon the tile and hang R 2 against the side of the beaker so that the paper adheres to the beaker and is about two-thirds immersed in the urine. Take up two slips of blue litmus paper—B 1 and B 2, and proceed as with R 1 and R 2. After R 2 and B 2 have remained in the urine three minutes, remove them and lay them beside R 1 and B 1 on the tile. The order upon the tile should be R 1, R 2, B 2, B 1, as shown diagrammatically below. The tints will now lie side by side and the eye can readily detect any color change that may have occurred.

There are three possible alterations in tint: I.—Of R 2 to bluish, which means that the urine is alkaline. II.—Of B 2 to reddish, which means that the urine is acid; and III, of R 2 to bluish and B 2 to reddish, which means that the urine is amphoteric.

If an alkaline reaction be observed, it is important to determine whether or not the alkalinity is due to ammonium carbonate. To gain this information, heat the tile gently until the four slips of litmus paper upon it are thoroughly dried. If

R 2, which had become bluish in the urine, regains its reddish tint by drying, then the alkalinity of the urine is due to ammonium carbonate. (This means that the bladder is infected.)

If R 2 becomes frankly blue, the urine is said to be sharply alkaline. If R 2 becomes but faintly bluish, the urine is said to be slightly alkaline. Similarly, when B 2 becomes frankly red or faintly reddish, the urine is said to be respec-



tively, sharply acid or faintly acid. It is my experience that in health the most common reaction for the mixed urine for twenty-four hours is the amphoteric reaction and not the acid reaction, as is customarily stated.

NOTES.—R 2 and B 2 are apt to fade slightly where immersed in the urine, due to solubility of the coloring matter, but no importance is to be attached to this change. The hands, if not washed carefully, are apt to have some unsuspected power to change the color of litmus paper.

REPORT OF THE COMMITTEE ON THE U. S. PHARMACOPOEIA.

L. D. HAVENHILL, CHAIRMAN.

The work of the committee this year has been very much handicapped. It has suffered the loss of both of its efficient officers, Chairman George M. Beringer resigned, and Secretary C. S. M. Hallberg, by death. Because of subsequent misunderstanding, the committee was not reorganized until late this spring. The short time then remaining and the fact that five of the members are actively at work in the Pharmacopoeial Committee of Revision and two in the Committee on the National Formulary, made it inadvisable to attempt concerted action along any line of investigation. The report, for these reasons, will necessarily be brief and confined to a few miscellaneous topics.

Aquae. Considerable complaint is heard concerning the use of Purified Tale as a distributing agent in the preparation of the aromatic waters. Mr. Mittelbach says, in this connection: "I do not like Talcum or Magnesium Carbonate or any-

of the distributing methods for the preparation of the official waters. One is nearly as bad as the other. I believe if all the official waters were made by distillation, we would have ideal ones. I believe that this would add much to their keeping properties. If stronger Rose and Orange Flower Waters keep so well, the others will also." The chairman endorses the above; distributing powders are not satisfactory; the ideal product would be one made by distillation. He believes, however, that distillation is a little too tedious to appeal to the majority of pharmacists and has, therefore, been advocating for several years the making of the waters from the respective oils by solution in hot water. The process requires but little attention from the pharmacist, the product is practically sterilized, saturation is secured, and traces of empyreumatic substances are volatilized. Its only weakness lies with the quality of the oil. This process is recommended in the British Pharmaceutical Codex in preference to the distribution method. The chairman's experience with the imported (so-called) rose water has not been satisfactory. He has not found it superior in any respect to that made from a high-grade oil of rose by the hot process. The Rose Water of the German Pharmacopoeia is prepared by dissolving the oil of rose in hot water.

Aspidium. Much of the male fern of the market does not conform to the U. S. P. description. It is very largely composed of "fingers" which, it is understood, are the peeled stipe bases. It would be very desirable to ascertain if these are equally active with the rhizome and if so to include them in the official description. It may be that much of the complaint that we hear concerning the inactivity of the oleo-resin of male fern may be traced to this source, instead of to the use of rhizomes which have not retained their internal green color. If so, these "fingers" should be specifically excluded.

Benzoinum. The question is raised concerning the amount of Siam Benzoin that is used in medicine. Its price, when compared with the Sumatra Benzoin, is very much against its ever being used as a substitute for the latter. If retained it ought to be specially described, as good samples are almost wholly soluble in alcohol. Sumatra Benzoin is nowhere near soluble in alcohol if the accompanying sticks and pieces of bark are to be considered as a part of the sample. This inert material often exceeds 40% and it is obvious that the U. S. P. must place some limit on it or else introduce a purified benzoin. A very good looking sample will often contain 20% of this material and it is believed that a limit of 20% for wood and bark would be liberal. The limit of ash should not be increased beyond the present limit of 2%.

Cera Flava. Considerable of the domestic bees' wax is produced in apiaries in all of which it is the custom to use "starters," "foundation" or "guide combs." Bee men claim that the wax produced from such combs will not comply with the U. S. P. requirements. If it can be shown that the starters can not be made from pure wax, then the desirability of lowering the standard for bees' wax should be considered.

Extractum Rhamni Purshianac. The chairman has not succeeded in reducing this extract to a pulverizable condition on a water-bath at a temperature of 70° C.

He has also found several samples in which the percentage of dry extract was greater than 25%.

Oleum Lini. Several states have adopted the U. S. P. standards for Linseed Oil in their paint and oil laws. This is, to a certain extent, unfortunate, unless the U. S. P. oil is none too good for commercial purposes. If the U. S. P. standards are to serve commercial purposes, they should be elaborated. A bland taste does not seem to characterize the taste of linseed oil. We have tasted of many samples which had a decidedly bitter taste. Should they be condemned on the taste? The length of time, the temperature, the circulation of air, and other conditions greatly influence the rate of "drying." These should be definitely stated in the resinification test. An acid number would be desirable to limit free acid. Our understanding is that a linseed oil of high grade may contain as much as 1.5% of unsaponifiable matter; if this is correct, the statement that it is completely saponifiable, etc., should be modified. Glacial Acetic acid has not given satisfaction in the rosin oil test. The originators of this test used acetic anhydride and it, instead of glacial acetic acid, should be used when making this test.

The Association of Official Agricultural Chemists is advocating the substitution of the Hanus method for the Hübl method for determining the iodine numbers. Their reasons should be considered with respect to a similar substitution in the U. S. P. A chemical test for the detection of fish oils is very much needed.

Oleum Terebinthinac. This is another substance for which the official tests are made the basis of commercial valuation. The tests for the presence of rosin spirit needs strengthening and a test for coal tar oils would be welcomed.

Pulvis Aromaticus. The chairman has submitted this formula to a number of pharmacists and finds that it is not clear as to whether it calls for 15 gm. of Cardamom or 15 gm. of Cardamom seeds. The same lack of clearness is found in the formula for Extract of Colocynth, though in this case it is immaterial whether the seeds are removed before or after weighing.

Pulvis Effervesceus Compositus. In preparing these powders it is all right to dry the Tartaric Acid and the Sodium Bicarbonate, but when it comes to drying the Potassium and Sodium Tartrate, which contains about 25% of water of crystallization, one might question whether drying is synonymous with exsiccation. The question again comes up whether the drying is to be done before or after the weighing. This is an important matter when it comes to question of deciding the standard weight of the contents of the blue paper.

Sulphur. It seems highly improbable that a sublimed sulphur which contains 0.5% of non-volatile matter will yield a washed sulphur which will contain not more than 0.2% of non-volatile matter. The chairman attempted to verify this experimentally and up to date has examined 11 samples. He has not found one which contained as much as 0.5% of non-volatile matter. The range has been from 0.006% to 0.1%. This is less than that allowed in washed sulphur and the conclusion is reached that the allowance in the latter article is liberal enough and that there is little if any necessity for a difference in this requirement in the two

articles. On the other hand, he has never examined a sample of Precipitated Sulphur which was free from non-volatile matter. It does not seem reasonable that there should be such a sample. It is suggested that a maximum limit of 0.3% be allowed in each, Washed, Sublimed and Precipitated Sulphur. Among the samples of Sublimed Sulphur examined there was a noticeable difference in the colors. Some were very pale yellow and looked more like pulverized than like sublimed sulphur. These pale yellow samples were not free burning and appeared to be impure, though they did not contain more than a few one-hundredths of one per cent. of non-volatile matter. The statement is made in the Pharmacopoeia that Sublimed Sulphur is readily soluble in Carbon Disulphide. It is believed that this statement should be modified. Most text-books state that it is only partially soluble in Carbon Disulphide and that the amount of insoluble sulphur may amount to as much as 6%. We have examined several samples and find that content of insoluble sulphur is usually about 4.5%. If the Purity Rubric is to remain an assay method ought to be supplied.

This committee, in its report last year, presented a list of general principles bearing on the IX rev. of the U. S. Pharmacopoeia. Supplementing these, we would like to suggest concerning No. 16, which relates to the fineness of powders, that there be a minimum requirement to the effect that not more than 25% of the powder of a given fineness should pass through a sieve having 10 meshes more to the lineal inch. The diameter of the wire should be stated in millimeters rather than by gauge, as different gauges are used for brass and iron wire, respectively.

Concerning No. 18, which relates to synonyms, this year's chairman feels prompted to dissent. He sees no reason why synonyms should be perpetuated by publishing them in the Pharmacopoeia.

Concerning No. 23, he agrees that structural formulas would be out of place in the U. S. P., but he would not like to have this so interpreted as to eliminate the constitutional formulas now used. Empirical formulas for organic chemicals are of but little value.

The pharmacist is frequently called upon to prepare saturated solutions. The solubility figures of the U. S. P. are not suitable for this purpose, since the resulting solution will, in the majority of cases, be supersaturated. The former figures at 15° C. were of more value for this purpose.

We believe that the question of percentage solutions should be decided by the Pharmacopoeial Committee of Revision. Physicians are not agreed on this subject, and the pharmacists would be glad to have some authoritative statement to guide them.

A neglected function of this committee is to collect statistics regarding the frequency with which official and semi-official remedies are used in legitimate practice. In this connection the chairman desires to call attention to the fact that our late lamented member, Professor Hallberg, began in June, 1908, to collect statistics on one million prescriptions under the direction of the Board of Trustees of the U. S. Pharmacopoeial Convention. Professor Hallberg succeeded in collecting the data from 117,000 prescriptions, and the report was

placed in the hands of the Pharmacopoeial Committee on Revision in Circular 100, January 14, 1911.

The report embraces 122 collections of nearly 1000 prescriptions each, and represents 57 cities and 28 states. It is most elaborate and full of valuable information. It is interesting to note in the summary that the 15 most frequently prescribed drugs per thousand prescriptions are the following:

1. Nux Vomica and Strychnine.....	67
2. Opium, Morphine and Codeine.....	64
3. Digestive Ferments and Pepsin.....	56
4. Quinine and Salts.....	40
5. Calomel	36
6. Sodium Bicarbonate.....	30
7. Phenyl Salicylate (Salol).....	29
8. Phenacetin	23
9. Bismuth Subnitrate.....	22
10. Cascara Sagrada.....	22
11. Potassium Iodide.....	19
12. Sodium Salicylate.....	19
13. Caffeine	17
14. Arsenic	16
15. Acetanilid	12.5

According to this summary, Morphine is less often prescribed than either Arsenic, Acetanilid or Caffeine. It is probable, however, that this showing is occasioned by a relatively less amount of the morphine administered being recorded in prescriptions.

THE MAN WILLING TO PAY.

But to the man who refuses to be a galley slave, who feels the hot blood surging through his veins, who has ambitions, who wants to grow and develop, mentally, morally and physically, who yearns for the things that money can't buy—friendship and love, and the laughter of children, who realizes that we are passing through this life but once, and should give and take all the happiness and pleasure we can—that he should live, fully and joyously, as we go along, even though it does cost a few dollars each year—to such a man, the man who is willing “to pay the price,” life has a meaning all its very own, a meaning which is Stygian darkness to the man whose God is money, money, money, whose thought is work, work, work, and whose life, in its final analysis, is a sickening, saddening and lonely failure, whether he be poor or whether he be rolling in the wealth of a Croesus.—*J. W. England.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Fifty-Ninth Convention

NOTE ON DISTILLED WATER.

W. H. ALLEN, PH. G.

The process of producing distilled water of the U. S. P., if properly carried out, will produce an article answering all the requirements thereof.

In the conduct of certain other industries great quantities of condensed water are produced, and in at least one of them, namely, the artificial ice industry, the condensed water is collected. Owing to the pollution of water supplies there has sprung up a demand for sterile waters, and as a consequence we have both distilled water and distilled-water-ice on the market.

In some plants the steam, after having passed through the engines, is condensed, the cylinder oil carried over mechanically by the steam is separated, the water chilled and very carefully filtered, producing a perfectly transparent water. This product is sold as distilled water; it will answer the requirements of the U. S. P.

In one of the ice processes the above water is used and remains quiescent while being frozen in tanks, and any impurities in the waters are contained in the last portion frozen. Such ice is termed "can ice." In the center of the cake is a line showing any separated dissolved air, etc. This central portion at times contains ammonia; also, in some cases, oil. It is presumed that the oil was in pseudo solution in the water before freezing and during the process is separated out. It is very small in amount, but can be noticed by cutting out the core and permitting it to thaw out, when the oil will appear as an iridescent film.

The question arises: Are the requirements of the U. S. P. sufficient? The water mentioned above answers all the U. S. P. tests, yet it may contain oil, which can only be determined by freezing out the sample, when its presence or absence can be determined in the core or last portion frozen.

NOTES ON THREE U. S. P. FORMULAS.

THOMAS A. EGAN.

Elixir Aromaticum. This valuable and extensively used Elixir, made according to the U. S. P., with the following exceptions, will possess an elegant aroma.

Take of the oils the required amount to make compound spirit of orange, U. S. P., and dissolve them in the alcohol. Put this solution in a refrigerator

(the soda fountain may be used), and allow the solution to remain forty-eight hours. Remove the solution from the refrigerator and let stand at the temperature of the room for twelve hours. Now follow the official directions to completion.

This preparation, made in this way, retains its fine aroma for a longer time than when made by any other process I have tried.

Elixir Ferri, Quininae Et Strychninae Phosphatum. This valuable and extensively used elixir is best made according to the U. S. P. method, with the following exception:

The soluble ferric phosphate is put into a wide mouth bottle with 30 cc. distilled water and dissolved by agitation without the aid of heat.

Dissolve the alkaloids in alcohol and heat enough to slightly warm and add the phosphoric acid, when the alkaloids are immediately converted into phosphates without precipitation.

Add the acetic acid to the ammonium carbonate contained in a suitable vessel, and when solution is complete, do not neutralize, but leave slightly acid. Neutralization with ammonia deprives the elixir of its color, which should be a nearly "pea green." Complete according to the official formula.

I have made this elixir for several years by this process, and have a sample nearly two years old that is as perfect in color as when first made.

Syrup of Hydriodic Acid. The elements of hydriodic acid have such slight affinity for each other that the acid is quite readily decomposed. By replacing 4 fluidounces of syrup with an equal volume of glycerin a permanent preparation, free from irritation, will be obtained.

MORE WORKING FORMULAS FOR CHEMICALS U. S. P.

W. H. GLOVER.

The loss of some chemicals which do not keep well, and for which the call in many drug stores is limited, leads the writer to suggest that working formulas for small quantities, say 100 grams, be inserted in the Pharmacopoeia for certain chemical compounds, as, for example, Ammonium Iodide, Strontium Iodide, Zinc Iodide, Calcium Chloride, Calcium Bromide, and also that working formulas for 50% solutions of Phosphate of Iron, Citrate of Iron and Ammonium, and Citrate of Iron and Quinine be inserted. I believe many pharmacists would prepare these solutions who would not prepare the scale salts, and the convenience at the prescription counter I am sure would be appreciated, particularly in damp weather.

As transportation companies refuse to forward Pyroxylin, I would suggest that a working formula for this be added, and also formulas for Zinc Stearate, Potassium and Sodium Citrates, Ammonium Salicylate, Thymol Iodide, and Hydrogen Peroxide.

Section on Commercial Interests

Papers Presented at the Fifty-Ninth Convention

PHARMACEUTICAL WINDOW DISPLAYS.

OTTO RAUBENHEIMER.

Pharmacy makes the claim, and this very justly, in my opinion, of being a profession. But let us consider if the displays in the majority of our pharmacies and drug stores impart this impression to the public as well as to the medical profession.

We find, first of all, displays of nostrums and patent medicines guaranteed to cure all ailments. It is a well-known fact that many a patent medicine manufacturer has reaped his fortune through such free advertising of his remedy. Druggists and pharmacists should bear well in mind that by dispensing such patent medicines they stamp them with their personal approval and recommendation. That such displays are very frequently of the illicit kind, can be seen in the "make man tablets," "female regulator," in the "bust developer," etc., etc. Pictures of "before and after" tend to make such displays still more obnoxious.

Another window display which is often met, and which the writer considers a disgrace to pharmacy, is a certain malt whisky, recommended as "the highest type of medicine for consumption, grippe," etc. Displays of china and glassware, bric-a-brac, cutlery, and even of jewelry, even if profitable side lines, are entirely foreign to pharmacy and will never help to give physician or layman the necessary confidence which is needed in buying drugs and for the compounding of prescriptions.

One of the strangest displays which the writer has ever noticed was canary birds, at a reduced price, in a Nassau street drug store in New York City. Not only are fountain syringes, together with their fittings, openly displayed in some drug store windows, but also that "marvelous spray syringe," that "female friend," which ought to be in the house and hands of every woman, married or single, together with full directions and explicit illustrations. But the climax in pharmaceutical (?) window displays was undoubtedly reached in the one which the writer noticed in the Quaker City, not very far from the oldest college of pharmacy, namely, a very large window full of suspensory bandages, reduced to 2 for 25 cents.

I can not close my introductory remarks without mentioning the very ethical and esthetical window display so frequently met, that is, toilet paper in rolls and packages. Very suggestive, indeed.

How can we expect to impress the laity and the physicians that pharmacy is a profession with such window displays?

The stock of even the average drug store is of such variety that pharmaceutical

window displays can be made which are a credit to the profession and which, at the same time, are profitable to the pharmacist.

Goods which should not be displayed in show windows. The education of the pharmacist should most certainly have taught him that light, and especially direct sunlight, has a bleaching or reducing action upon most substances. But judging from the window display of hydrogen peroxide, olive oil, perfumery, etc., etc., the knowledge of the men who make these displays seems to be very limited.

Such displays can be seen daily. Imagine the rays of the sun striking "peroxide" for an entire week! Imagine olive oil, which the producer in Italy or France has most carefully manufactured and put up in sealed bottles, now treated in such a manner in the U. S.! Imagine delicate and expensive perfumes, which have been skillfully compounded, blended and aged in cool and dark rooms, now exposed to the direct rays of the sun! Among other goods which should not be displayed in exposed show windows I might mention Malt Extract, which barely contains enough alcohol to preserve it in a cool place, and also rubber articles, which, upon exposure, become hard and brittle, or, as ordinarily expressed, "lose their life" and thus become unsalable.

The resources of the pharmacist who is somewhat ingenious and practical are very numerous.

Filtration. This simple process can be made quite an attraction if carried on in the show window. Water colored blue, with a little ultramarine, can be filtered clear and is a strange phenomenon to the average person. And still more so is the decoloration of water tinted with an aniline dye and filtered through kaolin.

Continuous Filtration, or one lasting quite a long time, can be easily arranged by an inverted large, f. i. 5 gallon bottle over a large filter. To prevent any splashing, the bottle should be fitted with a stopper and one or two pieces of glass tubing.

Percolation, especially if a bottle containing the colorless menstruum is inverted over the percolator, has proven quite an attraction in my window, and the highly colored percolate, dropping at regular intervals, arouses the curiosity of the public.

Distillation. The process carried on in the show window will give that pharmacy a professional and scientific look. A Remington still can be used for the distillation of water, and also for the recovery of alcohol from the marc left after percolation. If a glass retort is used, the difference between the colored liquid to be distilled and the colorless distillate will be a mystery to the average public.

The writer has found an upright or reflux condenser attached to a large flask quite an attraction. This method of distillation has the great advantage of taking care of itself without any constant watching.

Precipitation: This process can be utilized in the manufacture of milk of magnesia by filtering the solution of magnesium sulphate into the solution of sodium hydroxide contained in a large and tall bottle. The magnesium solution being heavier in gravity sinks to the bottom, forming magnesium hydroxide on its way.

Washing, Decanting and Siphoning can be demonstrated in the manufacture of the same preparation.

Laboratory Ware displayed in the show window is one of the best attractions.

The variety is so large that there is no trouble to select from. I will mention the following: funnels and percolators displayed on stands, percolator jars, tincture press, drug mill and sieves, water bath and evaporating dishes of glass and porcelain, precipitating jar and stirring rods, etc.

Chemical Glassware makes a still more scientific display, a display which gives the public the impression that this pharmacist belongs to another, i. e., to a higher class. The following can be displayed to great advantage: retorts, condenser and receiver, different styles of flasks, including volumetric flasks, pipettes, and burettes with stand, wash bottle and drying jar, beakers and test tubes in rack, hydrometers in jar, specific gravity bottle and even blowpipe.

Prescription Utensils constitute a very appropriate window display, which will impress the laity and also the medical profession and will thus help to increase the prescription business. The following might be displayed: different sizes of mortars and pestles of wedgewood, porcelain and glass, graduates holding from minims to a quart, even a prescription balance, pill machine, porcelain tile, tablet and tablet triturate machines, suppository machine and moulds, infusion jar, spatulas, an assortment of pill and powder boxes, different sizes of ointment and other jars and a row of prescription bottles, holding from one drachm up to a pint or quart.

Prescription books and files, especially if you have an old established pharmacy, always make an interesting window display. At the same time a sign might state the number of prescriptions compounded during a month or year, or during the entire existence of the store. While on the subject of books I will also mention a

Literary Display, as f. i., some of the Pharmaceutical Journals, which you read or some of the Books on Pharmacy, Chemistry, Botany, Materia Medica, etc., or some of the Pharmacopoeias and Formularies in your library.

Such a display, quite especially if it includes some foreign journals and books, will undoubtedly raise you in the opinion of the public above the level of the ordinary druggist. Along the same line, it is well to occasionally make a window display of your college diplomas, your licenses and your certificates of membership in different pharmaceutical associations. An odd display of that sort will interest the public and will benefit your business without any doubt. One of the most interesting displays is one of living plants in the show window.

It is not necessary to be an expert botanist to go out in the fields, or even in the city limits to gather a great many medicinal plants. The writer has done so on numerous occasions and might mention the display of digitalis in bloom, together with historical facts, from its introduction into medicine as a diuretic by the English physician, Withering, up to the discovery of its glucosides and the application of biological standardization.

A blooming larkspur plant, *Delphinium Consolida*, with its blue dolphin shaped flowers (wherefore its name), has proved quite an attraction and besides that has greatly helped the sale of tincture of larkspur.

Conium, the poison or spotted hemlock, with a bit of its history, as having been used by the Greeks to execute their criminals, and as being the plant from which the drink was prepared to poison Socrates, has proven an interesting window display. A jar of poisonous conium seed next to a jar of harmless anise seed together with a proper explanation of the danger of confusion, will have the bene-

ficial effect of inducing the laity to patronize the educated pharmacist in whom they have confidence.

Drug Display: Above all a druggist or pharmacist should occasionally make a display of drugs, including drugs in their crude state, in his show windows. Flowers, herbs, barks, roots, seeds, etc., displayed in boxes and jars, and of course properly labeled, make an interesting as well as an educational window display. If neatly written or printed signs, and a bit of history accompany this display, it will arouse still more attention.

I might also call your attention to the fact that at least one pharmaceutical manufacturing house in connection with its assayed preparations has placed in the hands of the pharmacist a set of drugs in glass stoppered bottles, with neat celluloid labels giving synonyms, definition, habitat, history, etc.

Besides window displays of vanilla beans in jars, of rhubarb in the root or in fingers, cubes and powder, of boxes of chamomile flowers, of tins of insect powder, of bars and pieces of castile soap, sticks of extract of licorice. The writer, during the Hudson-Fulton celebration in New York City (August 25-October 3, 1909) made a cinchona window display which was also exhibited at the October pharmaceutical meeting of the Philadelphia College of Pharmacy. This pharmaceutical window display is described in the *American Journal of Pharmacy* of November, 1909, p. 534-536, and was even abstracted in the "*Mitteilungen zur Geschichte der Medizin und der Naturwissenschaften*," Bd. IX, Heft. 3, p. 325, published by Leopold Voss, Hamburg.

The writer could continue to enumerate displays of chemicals and of various preparations, of specialties and of seasonable articles, but too much time has already been occupied.

Before closing, however, I want to call your attention to two facts, namely:

1. *Historical Information* as to the origin of drugs, the etymology of their names and their history is of great benefit in the practice of pharmacy and also in pharmaceutical window displays. Such a simple display as of sulphur, rochelle salt and cream of tartar lozenges can be made highly interesting and educational by displaying at the same time jars of these chemicals together with placards of their history.

2. *Dollars and Cents in Window Displays:* From a pecuniary standpoint these displays should also be profitable. In this age of commercialism even the pharmaceutical window displays have to produce hard cash. That such can be done I have fully demonstrated to my own satisfaction. The display just mentioned of sulphur, rochelle salt and cream of tartar lozenges greatly interested the laity, who willingly and rapidly bought these at 10 cents per box, while my nearest competitor offered sulphur and cream of tartar lozenges at 5 cents a box.

Through the display of chemical glassware the students of the high school bought their flasks, glass and rubber tubing and also chemicals at my store and also remembered me when their families were in need of any drugs, prescriptions, etc.

The display of the flowering larkspur plant, together with jars of the whole and ground seed and the finished tincture, has greatly helped the sale of the drug as well as the preparation. A neat show card in your window announcing that

you keep a complete line of chemicals and reagents will bring to your store students, amateur and professional photographers and physicians for their supplies and other goods.

Conclusion: The subject of window displays is most certainly an important one. In fact one of our bright pharmaceutical editors has even written a book, "Window Displays for Druggists," of which two editions have so far been published.

I trust that my suggestions for pharmaceutical window displays will be somewhat considered and will have the desired effect, namely, that more displays will be made pertaining to pharmacy, displays which will gain the confidence of the public and the physicians, and which will be a credit to the profession of pharmacy.

DISCUSSION.

MR. FORD: "It is refreshing to hear of the many things that we can put in our windows. I think about the nicest window display I have seen is the one represented in the hall outside, consisting of native medicinal plants. Especially effective as window ornaments are drug plants, concerning which the public has more or less information, as the Conium plant with which Socrates destroyed his life, or the Henbane plant, the juice of which was injected into the ear of Hamlet's father. A good window display can also be made from U. S. P. and N. F. preparations. We had one at Denver a while ago consisting of the best looking preparations put up in good style in gallon bottles. Such a display commands the attention of both physicians and the laity.

"Anything which has life or possesses motion is effective as a window display, such as revolving mechanical devices, etc.

"I have had a good many window displays along the lines indicated by Mr. Raubenheimer. One of the most effective consisted of the slow dropping of a potassium iodide solution into a solution of mercuric chloride. Each drop as it strikes the chloride solution becomes pink, then red, and falls to the bottom in a red layer, leaving a colorless solution above."

SIMPLIFIED METHODS OF RECORDING CHARGE SALES.

AMBROSE HUNSBERGER.

This brief communication is offered without pretense of embodying entirely new suggestions, or of outlining hitherto unknown methods of handling the problem of charge sales, but rather with the idea that its presentation might encourage an interchange of individual views and experiences from which a "composite" impression could be made which would more nearly present the ideal method of entering charge sales unfailingly, quickly and accurately.

Two classes of stores may be eliminated as having no vital interest in this topic: the one class being made up of the very small drug stores having few or no charge transactions, while the other embraces the very large stores—more or less of the "department" type—in which systematic records of both cash and credit sales are conveniently taken care of by assistants, whose duties and qualifications are purely clerical.

The class which is most vitally concerned in this problem consists of what might be termed the average drug stores, and includes approximately eighty per cent of the establishments devoted to the practice of retail pharmacy.

In this latter class of stores the duties devolving upon the assistants are necessarily diversified in character, partly because of the variety of lines handled and partly on account of the long business hours, which necessitate working in "shifts" and requires a constant rearrangement of the duties to be performed. This rearrangement of duties brings about a certain amount of divided responsibility because of the resulting uncompleted transactions, and it soon develops the tendency among the members of an establishment to depend upon "the other fellow" to complete the charge sale, with the inevitable result that no one attends to this important part of the transaction. This point is well illustrated by the old phrase which tells us that "that which is everybody's business is nobody's business."

There is little trouble, of course, with credit sales which are handled individually and completely, and in close proximity to the daily charge sheet, or the cash register, where but a step and a few pencil strokes are necessary to complete the record. The trouble arises when you are out front, remote from register or charge-pad, possibly serving a charge customer, when your busy modern American citizen comes flying in through the door and breathlessly requests a dollar roll of adhesive plaster, which you courteously hand to him from a nearby shelf, and he disappears as rapidly as he came with the injunction to "charge it." You are about to make a note of the transaction, but are met at the half-way point by a junior assistant with a request for information regarding a rush order which he is packing up, and after disposing of him you apologetically return to your waiting customer, having decided to enter up the adhesive plaster sale along with the charge sale before you. When finally the uninterrupted sequence of drug store events has enabled you to get in touch with your charging system you have probably lost all recollection of the man in a hurry for a roll of adhesive plaster.

While such occurrences are not the rule, yet there are a sufficient number during a year's work in a reasonably busy store to warrant the assumption that the net profits would be increased materially by their total elimination.

It is probably true that in many stores the active proprietor is the chief culprit. His desire to avoid the appearance of unnecessarily detaining a charge customer occasionally prompts him to allow the purchaser of numerous articles to depart before making a complete record and in entering the charge subsequently important items are overlooked, or with proper gallantry he escorts Mrs. Jones to the door, only to meet Mrs. Brown coming in with an order requiring immediate attention, and the first transaction is forgotten, or perhaps only in part recalled to memory. Another illustration is that of your friend, the doctor, with whom you discuss at length a topic you've had in mind for some time and when he finally departs you have probably managed to overlook the fact that the doctor bought a two dollar hypodermic syringe on credit just before you began to unlimber your eloquence.

The proper control of packages sent out by messenger, express or post also presents some difficulties, particularly in stores where the amount of this business falls just below the volume that would warrant the organization of a department having this work in charge.

Taking into consideration, then, that in the average drug store the organization of departments, properly manned, and built out from a common center (cashier or bookkeeper) is precluded because of the kaleidoscopic character of the trans-

actions requiring trained assistants with shifting hours of duty, it will be seen that the establishing of a system of properly controlling credit sales is no simple problem, and if not given the deserved consideration may seriously menace the success of a business.

The successful operation of methods of control must involve anticipation of the cooperation of our patrons. It is a generally accepted fact that the same patron who cheerfully passes twenty minutes in a department store awaiting completion of a transaction involving the purchase of a paper of pins will turn a drug store inside out if detained over ten minutes by the preparation of a prescription which may involve the handling of violent poisons and require the utmost skill in the manipulation. And how does he explain his calm attitude toward the pin transaction—"Oh, that's their system. You couldn't run a department store without a system." A logical conclusion, of course, but did his own sense of reasoning lead him to it? Why, no, the department store simply established the system, enforced it, and the pin customer is so well used to it that he almost deludes himself with the idea that it was his own suggestion. And why does he fail to recognize the need for system in the drug store, of all places? Probably because his experience has taught him to believe that the department **store** would rather lose the sale than fail to enter the charge, while the druggist would rather fail to enter the charge than lose the sale.

It must be understood that this attitude is not assumed by the great majority of our charge customers, but applies to isolated cases such as any of you can probably call to mind; and it is those cases that we are dealing with—it is usually the isolated, the odd, the unexpected credit transaction that we forget to record. Impatience with our system on the part of the patron must be overcome by a judicious display of tact and diplomacy, the needs of our patrons must be supplied courteously, intelligently, and with dispatch, and then without undue delay or ostentation, but with firm insistence for a complete record of charge purchases.

While perhaps not the best method extant the scheme of carrying paper pads has been found to work fairly well. An important part of this system is involved in carrying the pad in one's pocket—a promiscuous distribution of pads about the establishment and a wild scramble for one when an entry is to be made is neither dignified nor helpful. They should be distributed among the members and their invariable use for the purposes indicated insisted upon. The fair success of this method may be attributed to the fact that it places the facilities for recording credit transactions immediately under one's hand at all times, and may be adapted to cover only the remote parts of an establishment, or to include all transactions within the place of business. The ultimate disposition of the slips is governed by the next step in the credit system—the bookkeeping. If it be desirable to preserve the original entries the slips may be placed in envelopes properly dated, and filed away.

The use of blank sheets in these pads is not desirable, for several reasons, the chief ones being the lack of symmetry in the placing of names and items, which makes the work of transferring more difficult; the more impressive appearance of a printed sheet in the eyes of the patron; and the further fact that a little ingenuity exercised in wording the printing makes the sheet do double and even triple duty, in that it may be made to serve as an emergency order blank, a charge slip,

and an identity slip that stays with the prescription until its final delivery to the proper party. The wording on such a sheet would include blank spaces for name, address and date; method of delivery is indicated by a pencil-tick following the abbreviations "Mess.," "Post," "Ex.," "Call." Charges are indicated likewise after "C. O. D. Chg. Pd.," and the identity of all concerned in the transaction is indicated by "Ord' by..... R'e'd by..... Del'd by..... The time to be delivered is stated after "When".....

When this slip is used to enter a charge it is filled out in the usual manner, "Chg." is ticked and "del'd" placed after "When." If used for the other purposes indicated it goes through the usual routine, after which it is placed on the charge file or filed with "Orders filled." It can also be made to serve the purpose of a charge against the messenger who takes C. O. D. deliveries. If desirable these may of course be used in duplicate with the aid of carbon paper.

The commendable points of this method are its simplicity, accuracy, but it won't do to say it's infallibility, because just at that point the personal equation steps in. However, this communication may bring out the infallible method, since the spirit of scientific management is in the air, and there is no one more deserving of discovering that method nor better entitled to its use than the retail pharmacist.

DISCUSSION.

MR. GUILFORD: "These talks on bookkeeping and proper management of drug stores have certainly appealed to me. I conduct two large stores and they have been made successful through system, through bookkeeping and strict accounting for cash received. I have in my two stores the best cash system that I have seen in any drug store and I have been in a great many. I especially believe in system and think it is impossible for a man to succeed in business without system. He must know what his profits are, and these can be ascertained only through a thorough system of bookkeeping."

MR. DAVID STOLZ: "I came here to learn something and have gotten hold of some good things, especially the "credit system" of the paper just read. At our store there is a large amount of telephone business, and consequently a number of charge accounts. We have one of those machines in which there are three rolls of paper. The top one is the original, which we put into the customer's package; the blue one we give to the delivery boy, and it is signed by the customer when the package is delivered. It always bears the name of the party, and at the end of the month if the customer claims he did not receive the order the matter can be traced. If there is nobody at home, the boy writes on the slip, "Left at the front door or rear door," etc. If the package is sent by special messenger, it is indicated what messenger service delivered it.

"Regarding Mr. Cook's paper, which I enjoyed very much. He gave a lot of different items under which things should be charged in the store accounts. That looks very good, but where you have a store and employ a bookkeeper and have many large charge accounts to your customers your bookkeeper has all she can do to itemize these accounts. I do not see why you should have so many accounts, as Freight, Drayage, Clerk Hire, expense of this and expense of that all under different items."

MR. HYNSON: "It is simply a question of information. If you do not want that information, don't keep these accounts. The whole idea of keeping accounts is to see how much you are spending for freight or one thing or another, and to give you information about your business."

Section on Historical Pharmacy

Papers Presented at the Fifty-Ninth Convention

PRODUCTS OF THE ISLAND OF SOCOTRA.

ADOLPH W. MILLER, M. D., PH. D.

The Island of Socotra, situated in the Indian Ocean, 543 miles distant from Aden and 120 miles east of Cape Guardafui, has been regarded as the source of Socotrine Aloes by the earliest writers on medicine, as well as by later authors. Although the island is in the direct steamer route from Aden to Colombo, it is almost isolated at present, principally owing to the absence of protected harbors. During the monsoon season vessels are compelled to give Socotra a wide berth. Even in the mildest weather, ships of larger size than the native Arab dhow are compelled to anchor some miles from shore.

Among the ancients, Socotra was known as the Island of Dioscorides, who appears to have been well acquainted with the virtues of aloes. Both this and the modern name are usually traced back to a Sanskrit form *Duipa-Sakhadhara*, meaning the Island Abode of Bliss.

Cosmas, a traveller of the sixth century, says that the people of Socotra spoke Greek and that they were largely Christian, having a Bishop from Persia.

The famous Arab traveller and geographer of the twelfth century, Idrisi Abu Abdallah Muhanmed, al Sherif Al Idrisi, better known simply as El Edrisi, relates the following curious tradition, which was current in Eastern countries as early as the fourth century: When Alexander the Great had conquered Persia, India and the adjoining islands, his tutor Aristotle, the former apothecary of Athens, advised him to seek the island that produced aloes. Therefore, when he had been sated with his conquests in India, he set sail for Socotra, the climate and fertility of which he admired. Following the advice of Aristotle, he removed the original inhabitants and put Greeks in their place, enjoining the latter to preserve carefully the plant yielding aloes, on account of its utility and the necessity of employing it as an ingredient in certain sovereign remedies. The colony of Ionian Greeks, which he established, remained under his protection and that of his successors, acquiring great riches in course of time.

When the religion of the Messiah appeared, they embraced and retained the Christian faith up to the time of Edrisi's visit in 1154. The Socotrans remained Nestorian Christians throughout the Middle Ages, but they have gradually lost all traces of Christianity except a reverence for the cross. They now practice South Arabian moon worship.

As no Greek or Roman writer confirms Edrisi's story, it is probably merely a fable invented to account for certain facts. Still it is somewhat strange that

Mohammedan voyagers of the ninth century repeat the same legend. Masudi, of the tenth century, says that aloes was produced then only in Socotra by Greeks, who had been sent there by Alexander the Great, and who had improved on the original methods of the natives.

The Journ. de la Soc. Pharm. Lusit. of 1838 contains a letter addressed in 1516 by Thome Pyres, an apothecary of Cochin to Manuel, King of Portugal, in which it is stated that the most highly esteemed aloes is grown in the Island of Cacotora.

The records of the East India Company, in the early part of the seventeenth century, contain many notices of aloes being bought of the King of Socotra. Wellstead, who visited Socotra in 1833 says that the cultivation of aloes had then declined, but that the walls which had enclosed the old plantations were still to be seen. At that time, the production of the drug was a monopoly of the Sultan.

Dr. Kirk, when residing in Zanzibar from 1866 to 1873, noted that then aloes from Socotra arrived there in a very soft state, contained in goat skins. After being transferred to wooden boxes and having solidified, it was shipped to European markets.

An interesting and valuable report on the Island of Socotra has been furnished to the government by Chas. K. Moser, United States Consul at Aden, Arabia. He states that the island is about 73 miles in length and 36 miles wide at the widest part, and that the population is now estimated at 13,000. It is very mountainous, the Haghier range rising from 2000 to nearly 5000 feet, and forming the core of the island. Although very rocky, the whole island is exceedingly fertile. Many strange forms of flora are found on the mountain slopes, chief among these being *Dendrosicyos socotrana*, or cucumber tree; *Dracaena cinnabari*, or dragon's blood tree in several varieties; adeniums; euphorbias and three species of the frankincense tree (*Boswellia amicro*, *B. elongata* and *B. socotrana*). All of these trees have immense swollen limbs, suggestive of vegetable elephantiasis. By means of this peculiarity, these plants have adapted themselves to subsist on an extremely dry soil.

Rain rarely falls in the Haghier range except during the months from May to September, when the streams become torrents and the soil is then completely saturated. Most of these trees are resin bearing. They exude a thick milky substance, which would have a commercial value were it to be obtained in a less isolated locality.

In ancient times, Socotra was famed for frankincense, myrrh, dragon's blood and spices. Now Socotra produces more dragon's blood. Myrrh and frankincense are more easily procured and of better quality from Somaliland and other localities. The Socotran does not take the trouble to collect the products from the wild trees that abound. A little dragon's blood is usually used as a dye, and a small quantity of frankincense is shipped to Aden. The principal item of export is ghee, a butter made from goat's milk, which is highly prized by the Arabs. The natives call the resin of the frankincense tree luban, which is the proper Arabic name for it, derived from "Lbnan." This is the Arabic name for Mount Lebanon, which is so called from the milky whiteness of its perpetual snow. This same term is found in the Hebrew and in the Greek *libanos*, as well as in our Latin

term Olibanum, which is simply the result of joining the Arabic article "al" with the root luban.

The frankincense of Socotra is inferior in quality to that produced in the Hadramaut and Somaliland, and the island trees secrete a smaller quantity of the resin. The average yield per tree in Socotra is about two pounds each year. Its value is whatever amount of rice, ghee, cotton goods or kerosene oil the collector can persuade the Arab trader to give for it.

The ruby-red exudation of the dragon's blood tree is valued among Orientals as a dye. The Socotrans call the tree A'aree-ib and the dragon's blood resin Mu'soi'lo. Like the incense, these trees stand in thousands on the Haghier hills, and a large source of revenue could be obtained from their milky juices. Fifteen fraselas, or about 48 pounds of dragon's blood is considered to be worth five goats, which the Arab trader will value at ten Maria Theresa dollars, or about \$4.46. According to this somewhat complicated calculation, the dragon's blood is worth about 10 cents per pound.

The finest kind of frankincense or al-luban offered in the Aden market is used as incense in the Latin churches and in the richest Mohammedan mosques of the East, where it is called "luban dakkar." The price of the best kind varies from \$11.50 to \$18.00 per bokkar, consisting of three baskets, each containing one hundredweight. The second quality of a clear, transparent, nearly white color is exported only to Cairo, where it is in great demand, as the Arabs use it as a chewing gum for the prevention of thirst. Its price varies from \$1.00 to \$4.00 per maund of 32 pounds. It is called "luban haali," meaning sweet incense.

The third quality is of dark brownish color and is used by the poorer classes as an incense and as a fumigant for driving away mosquitoes and other insects. The merchants pay from 16 to 33 cents per maund of 32 pounds for this grade.

The natives of the interior grow small patches of dhoorra, tobacco and cotton. Their principal occupation is the raising of sheep, goats, asses and camels, and a very fine breed of humpless cattle, quite distinct from those met with in Asia and Africa.

Civet cats are occasionally caught and the civet obtained from them is used locally. Wild asses in thousands roam through some parts of the island. Frequently the young are caught by the Bedouins and trained to domestic uses.

The Socotran cow is the most beautiful and important of the native animals. She is without the hump, which characterizes Indian cattle. Even in the driest season, she always presents a sleek, well nourished appearance. Her milk is rich in butter fats; two and three gallons per day is a frequent yield of the choice cows. The Socotran cows are fawn color, and in general appearance they are much like the Alderney. As they appear to be the ideal dairy animals for hot, dry countries, the Indian government is endeavoring to introduce them into India.

It is to be noted that in the above account no mention is made of any Socotran aloes being at present produced and exported from that island. Most probably that which is now sold under the name of Socotrine aloes is all obtained from Zanzibar, Moka and other countries.

The 1908 edition of Brockhaus' *Konversations Lexikon* makes the positive assertion that at present no aloes whatever is obtained in Socotra.

It is therefore an open question as to whether those who still dispense and sell Socotrine aloes are not in conflict with the rigid provisions of the Pure Food and Durg Law of 1906.

Even if it could be established that a certain lot of aloes was actually the product of the *Aloe socotrina*, Lamarck, this would not entitle the drug to be sold as Socotrine aloes, as the *Aloe socotrina* was shown by Bolus to be indigenous to the Cape of Good Hope, while the true Socotrine aloes was formerly obtained from the *Aloe Perryi* of J. G. Baker, and a dwarf species with spotted leaves.

BUSINESS CREDIT AND FIRE INSURANCE.

Practically all business in the United States is done upon credit, and the accurate placing of a man's rating is one of the carefully studied commercial sciences of the day. That merchant is foolish who does not give the information requested by creditors or by commercial agencies, and who does not comply with all of the requirements of the situation. Insurance protection plays a large part in the problem of credit, and every merchant owes it to his creditors as well as to himself to see that he buys fire insurance of the proper kind and quantity. So important is this consideration that the National Credit Men's Association, during the last two or three years, has published no fewer than six booklets on the relation of insurance to credit. And yet every day merchants are being burned out with little or no insurance, thus subjecting themselves and all their creditors to losses for which there is no excuse at all.—*Bulletin of Pharmacy*.

CLAMS AND CALAMITY.

A cooped-up, imprisoned, bilious druggist, can neither be a good husband, father or citizen, and it is your plain sacred duty to yourself, your family and your state to help in the regeneration of pharmacy. Don't be a clam—don't breathe calamity—get up and out, and emancipate yourself. Don't sit in your store, studying the race cards or devouring yellow literature; read your drug journals, see what others are doing, and tell others what you are doing; help the editors, poor fellows, to make their columns good lively reading, and you will help others as well as yourself.—*W. Bodemann*.

Reports of A. Ph. A. Committees

Abstracts from the Report on the Progress of Pharmacy for the year 1912, by C. Lewis Diehl, Reporter.

(Second Installment.)

Fehling's Solution: Evolution of the Original (Empirical) to the Present-day (Exact) Composition.—O. Luning contributes the results of an inquiry into the gradual evolution of the originally simple, though empirical formula given by Fehling (1848), to that modernly insisted on, which requires great exactitude in the quantities of copper sulphate (34.639 gm.) and of sodium hydroxide (51.6 gm.) to the liter. By his original formula, Fehling simply endeavored to produce a stable solution, without reflecting upon the possible use of the reagent for the quantitative determination of glucose; he directed that 40 gm. pure crystallized cupric sulphate be dissolved in approximately 160 gm. water, and to the cold solution the addition of 160 gm. potassium tartrate in 500 gm. caustic soda solution, sp. gr. 1.12 and sufficient water to make 1 liter at 15° C. But subsequently (1849), believing that 1 Mol. of sugar corresponds to 10 Mols. of cupric sulphate, he recommended the further addition of water so as to produce 1154.4 cc. of the reagent, which possessed this relation to the sugar, and this soon led to the reduction of the cupric sulphate to 34.639 gm. in the formula producing the original volume of 1 liter. The author then interestingly describes the further evolution until the present formula, used almost universally, was adopted, this consisting, as is well known, of two solutions, to be mixed in equal volumes as required, viz.: No. 1, 34.639 gm. Cupric Sulphate dissolved in water to make 500 cc.; No. 2, 51.6 NaOH (in 100 cc. Water) and 173.0 gm. Rochelle Salt in sufficient water to make 500 cc. The author proves from the literature that the insistence on the fractions of copper sulphate and NaOH is not necessary. The quantities may be rounded off to 34 and 51 gm. respectively, and this should be done in the published formulas

for this solution.—Apoth. Ztg., XXVII (1912), No. 10, 91-92.

Fern Rhizomes: Anthelmintic Value of Various Sorts.—In view of the statement that the ethereal extract of *Dryopteris dilatata* is at least four times as active as the corresponding extract of the official *Aspidium filix-mas* rhizome, and has therefore been suggested to replace male fern in the various pharmacopœias, H. Rosendahl has examined a number of anthelmintic fern rhizomes, his results confirming the inferiority of *Dryopteris dilatata*. The yield of ethereal extract is about the same (10%); but while it takes from 8-10 gm. of oleo-resin of *Aspidium* to drive off the *Bothricephalus latus*, it requires only 2 gm. of the oleo-resin prepared from the rhizome of *Dryopteris dilatata*, or 4 gm. of that from *D. dilatata* var. *spinulosa*—the latter yielding however as much as 17% of oleo-resin. The rhizomes of other ferns yielded very small percentage of oleo-resin: *Filicis aquilini*, 20%; *Filicis feminæ*, 0.9%; *Filicis alpestris*, 0.7%. Under the microscope these extracts exhibit various crystalline structures which serve well for their identification.—Apoth. Ztg., XXVI (1911), No. 27, 217; from Svensk. Farmaceutist Tidskrift, 1911, No. 5, 85-89.

Ferrous Salts: Dimethylglyoxim a Sensitive Reagent for Ferrous Salts.—If to a drop of the solution of a ferrous salt a little tartaric acid is added, followed by about 1 cc. of alcoholic solution of dimethylglyoxim and the mixture is then supersaturated with ammonia, an immediate intense red coloration results, resembling that produced by rosolic acid with alkalis. The reaction is more sensitive than any of the known ferrous reactions, but is not so stable on exposure to air, because the ferrous compound is slowly converted into the ferric state and the color disappears when this conversion is complete. It reappears, however, on the addition of a reducing agent, such for example as stannous chloride, metallic zinc, etc. The reagent is not suitable for the determination of small traces of ferrous salts, either by themselves or in admixture with ferric salts, since by the supersaturation of the acid fluid with ammonia considerable heat is developed, resulting in the

rapid conversion of the ferrous to ferric oxide, which does not give the reaction.—Pharm. Ztg., LVII (1912), No. 13, 136; from Chem. Ztg., 1912, No. 6.

Fixed Oils and Fats: Improved Method of Determining the Iodine Number.—G. O. Gaebel has used with advantage the potassium bromide-bromate solution, directed in the G. P. V. for phenol determinations, for the determination of the iodine number in fats and oils. The bromate solution is prepared by dissolving 1/60 Mol. of potassium bromate and 5/60 Mol. of potassium bromide in sufficient water to make 1 liter, and the determination of the iodine number is carried out with this as follows:

The usual quantity of fat or oil is weighed into a glass-stoppered flask of about 400 cc. and dissolved in 10 cc. of carbon tetrachloride; 50 cc. of the bromide-bromate solution are added, mixed by rotating in the flask, and the mixture is strongly acidulated with 30 cc. of diluted sulphuric acid (1:5). The flask is then securely closed with the slightly paraffined glass stopper, vigorously shaken once or twice, and then set aside at the room temperature protected from light. After permitting time for the complete reaction, the absorbed bromine is determined by carefully raising the stopper, adding about 1 gm. potassium iodide dissolved in a little water, then shaking vigorously and, after a few minutes, adding about 50 cc. of water, using this for rinsing the stopper and upper part of the neck of the flask. Finally the iodine liberated by the excess of bromate used is titrated in the usual manner with 1/10 N-thiosulphate, using starch paste as indicator. A blank experiment is made with 50 cc. of the bromide-bromate solution, and from the data so obtained the iodine number is readily ascertained by calculation (1 cc. 1/10 N, $\text{Na}_2\text{S}_2\text{O}_3 = 1 \text{ cc. } 1/10 \text{ N—Br.} = 1 \text{ cc. } 1/10 \text{ N—I} = 0.012692 \text{ gm. iodine}$). The results correspond quite accurately with the Hübl numbers given in the G. P. V.—Arch. d. Pharm., 250 (1912), No. 1.

Fluidextracts: Methods of Valuation.—Dr. E. Amort and Dr. W. Rothe, staff-apothecaries of the German War-Department, commendably discuss the progress that has been made in the methods of valuation of medicaments in general, but find that the proposed methods for the valuation of galenic preparations, such as fluidextracts and tinctures, are as yet deficient and lacking in exactness, being in many instances confined to determinations of specific gravity and resi-

due of evaporation. The authors have subjected a number of fluidextracts to examination and make a detailed report of their observations and results. In a series of six purchased samples of fluidextracts of condurango they obtained in four of them figures which varied materially from those obtained with a fluid extract of their own preparation. They conclude from their results that the determination of specific gravity and dry residue of evaporation alone gives no criterion of quality, but that the shaking out process with suitable solvents, in conjunction with the determination of dry residue, affords a valuable criterion of quality and conscientious adherence to the prescribed process of preparation. To this should be added the determination of the tannin precipitate and of the nitrogen content of the fluidextract.—Pharm. Ztg., LVII (1912), No. 18, 175-176.

Formosa Opium: Characters.—K. Dieterich reports the results of a chemical examination of three authentic specimens of Formosa opium, received from Dr. Ishizu, the Japanese Commissioner having charge of the Japan Division of the International Hygienic Exhibition. These opiums were, unlike the ordinary opiums, apparently obtained by a method of extraction, and therefore essentially extracts of opium, but inferior not alone to extracts obtained from the drug but to the opium itself. The three samples were identical in appearance, of a brown-black color, thick-liquid, extract-like, and in odor resembled the ordinary extract. Under the lens they were shown to be free from the plant-elements that characterize ordinary opium. Subjected to analysis by two of his chemists (Weinhagen and Mix) the results were as follows:

	No. 1	No. 2	No. 3
Moisture	24.37	20.68	25.96
Ash	3.58	3.74	2.55
Water Soluble substance			
dried at 100°	64.14	61.26	63.56
Morphine Content	5.27	7.55	5.71

The presence of meconic acid was determined in each of the samples.—Pharm. Zentralh., LIII (1912), No. 5, 114.

Lactic Acid: Reactions.—C. Reichard has made comprehensive investigations of certain lactic acid reactions, and describes a number that are particularly characteristic, such, for example as those obtained with potassium dichromate, ammonium heptamolybdate, and potassium ferricyanide. The addition of a little pulverized potassium di-

chromate to a drop of lactic acid, produces gradually, over blue-green, a nickel-green coloration, while ammoniumheptamolybdate produces under the same conditions at first a sky-blue color, also gradually changing to nickel-green. A solution of potassium ferricyanide yields with lactic acid a characteristic yellow coloration.—Pharm. Zentrall., LVII (1912), No. 3, 51-56.

Lecithin: Question of Solubility in Water.

—In view of the interest that has in recent years been manifested in medicine and pharmacy concerning lecithin and its preparations, resulting in the endeavor to present it for internal exhibition in form of solutions, wines and syrups, Dr. P. Salzmann has made a comprehensive inquiry to ascertain from the literature whether the assumption that lecithin from egg-yellow is soluble in water to form clear solutions is justified by the facts. According to the most recent researches, lecithin is a monaminophosphatid, containing for one atom of phosphorus one atom of nitrogen, and is composed of glycerophosphoric acid, cholin, and two fatty acids—probably stearic and palmitic or oleic. It is characterized by the latest writers (for example by Thierfelder) as presenting a plastic, wax-like mass, soluble in alcohol, ether, chloroform, carbon disulphide, benzol, and fixed oils, but simply swells up in water, forming a pasty mass which, when greatly diluted, forms a colloidal solution. It is therefore regarded by the author mentioned, and by others who have made comprehensive studies of the subject, as being an "organic colloid," capable of suspension in water so as to produce an apparent solution, but readily precipitated from such suspension by many substances, such as acids, metallic salts, etc., and even by alcohol, which by itself dissolves lecithin readily and completely. To meet a demand for water-soluble lecithin, such a preparation has recently been introduced under the name of "water-soluble egg-phosphatid." Examined by R. Cohn, this product was found to contain sodium chloride, glycerin, nitrogenous matter, glycerophosphoric acid and water, but not a trace of lecithin. This product is therefore in no sense a lecithin preparation, nor are the solutions, syrups and wines that are made from it.—Pharm. Ztg., LVII (1912), No. 14, 134.

Milk Sugar: Contamination with Bacteriae.—Experiments made by Dr. H. Kühl to determine the queries whether commercial milk sugar is contaminated with bacteriae,

and if so, what is their nature, convince him that commercial milk sugar frequently does not respond to hygienic requirements, and that besides inorganic and nitrogenous impurities, as has already been pointed out by others, it also contains bacterial impurities which, in some cases, are of an exceedingly dangerous nature.—Pharm. Ztg., LVII (1912), No. 11, 105; from Südd. Apoth. Ztg., 1912, No. 1.

Paraldehyde: Estimation of Acidity and

Acetaldehyde.—While the G. P. V. defines Paraldehyde to be a "clear, colorless liquid, containing about 4% of acetaldehyde," it gives tests which do not correspond with a paraldehyde containing 4% of acetaldehyde. Moreover, the pharmacopœia is silent regarding the acidity, although all paraldehydes have an acid reaction, which increases by age and has the effect of vitiating the test by consuming a portion of the liberated alkali before its titration with HCl. After a comprehensive study, E. Richter finds that paraldehyde should not contain more than 0.5% of acetaldehyde, since it is quite possible to obtain such paraldehyde on the market, as shown by the analytical results obtained with commercial samples. If, however, the G. P. persists in admitting paraldehyde containing as much as 4% of acetaldehyde, the tests should be carried out as follows:

Ten gm. of paraldehyde are dissolved in 100 cc. of water by agitation; 2 drops of phenolphthalin solution are added, followed by KOH solution, drop by drop, until the last drop produces a red color. For this purpose not more than 0.5 cc. of normal KOH solution should be required, indicating a maximum content of 0.3% of acetic acid (1 cc. N-KOH solution=0.060003 gm. Acetic Acid). Now, 20 cc. of sodium sulphite solution (25 gm. of crystallized salt in 100 cc. of water) are added, and the mixture of 20 cc. of the same sodium sulphite solution is then ascertained, and deducted from the amount first obtained. The remainder should not exceed 9.1 cc. Normal HCl, indicating a maximum content of 4% of acetaldehyde; or not more than 1.15 cc. if the sample contains only 0.5% of acetaldehyde (1 cc. Normal HCl=0.044 gm. acetaldehyde). As the result of his experiments, the author feels justified in recommending the following pharmacopœial definition for a good paraldehyde: Sp. Gr., 0.998—1.000; acidity, 0.3%; acetaldehyde, 0.5%; metaldehyde (not heretofore

considered), 0.1 to 0.2%.—Pharm. Ztg., LVII (1912), No. 13, 125.

Solomon's Seal: Proximate Examination of the Fruits.—Ernest A. Rayner reports the results of a proximate examination of the berries of Solomon's Seal (*Polygonatum biflorum*), picked at Saginaw, N. C., in the summer of 1910. These berries, when dried, resembled huckleberries in size and appearance. The outer husk is relatively small, the main part of the berry consisting of a cluster of about ten small, round, hard, and very tough seeds. The analysis showed them to contain: Sugars (glucose and a trace of fructose), 12.48%; Oil (mainly ricinolate), 2.00%; nitrogen, 1.88%; Ash ($\text{SiO}_2\text{Fe}_2\text{O}_3$, Al_2O_3 , CaO , MgO , K_2O , Na_2O , P_2O_5 , SO_3), 2.27%; other substances, cellular tissue, water, 81.37%.—Chem. News, June 21, 1912, 289-290.

Thorium: Separation and Estimation with Sebacic Acid.—While working upon the separation of thorium from the rare earths, T. O. Smith and C. James observed that sebacic acid gave a precipitate in a neutral solution which appeared to be quantitative. The thorium sebacate settles readily as a voluminous granular precipitate and is easily separated on the filter, while solutions of cerium, lanthanum, yttrium, etc., give no precipitate with sebacic acid even upon boiling. In order to test the availability of sebacic acid for the estimation of thorium, 50 cc. of a standardized solution (0.005572 gm. ThO_2 in 1 cc.) were heated in a 250 cc. flask to the boiling point, a slight excess of a hot solution of sebacic acid was slowly added, with continuous stirring, and the precipitate, which was formed at once, was immediately collected and washed on a filter with boiling water, then rapidly dried, ignited, and weighed as thorium dioxide. A series of experiments demonstrated the accuracy of the method, and, furthermore, that the presence of other rare earths—cerium, lanthanum, praseodymium, neodymium, samarium, gadolinium, etc., did not vitiate the result. The thorium sebacate washes readily, and the operation may be performed with ease in a very short time.—Chem. News, March 8, 1912, 109.

Tincture of Iodine: Liability to Change and Expedients for Its Prevention.—Th. Buddle, staff-apothecary in the German War Department, finds that under ordinary conditions there is a loss of iodine as such in the tincture of iodine of the G. P. amounting to as much as 20%, in the course of 9 months, resulting in the formation of hydrogen iodide,

acetic ether and aldehyde. This change is particularly rapid during the first 8 days, but is materially retarded by the addition of 3.5 gm. of KI or NaI for 10 gm. of iodine. Nevertheless, the changes during 6 months are so great that a tincture should not be dispensed after it has been prepared that long. Moreover, it should be preserved in glass-stoppered bottles, contained in a tin can lined with asbestos on the inner side, the asbestos containing an iodine-combining substance. It has been a problem of the military sanitary authorities to devise means for supplying this tincture in a practically unchanged condition. This has been solved by supplying sealed vials, each containing 10 gm. of iodine and 3.5 gm. of potassium, 10 of such vials being enclosed in a card box. When the tincture is needed, the contents of a vial are dissolved in 90 gm. of alcohol, with instruction not to use the tincture so prepared after it is 6 months old.—Pharm. Ztg., LVII (1912), No. 18, 176.

Tungsten: New Assay Method.—B. M. Divani observes that when tungsten is in the condition of tungstate it is possible to precipitate and estimate the tungsten in the form of the trioxide— WO_3 —all that is needed being to acidify the solution with HCl, HNO_3 , or even H_2SO_4 . But tungstic acid being slightly soluble in mineral acids, it is usually advised to render it insoluble by repeatedly evaporating (and resolution of) the acidulated solution and finally warming the dry residue for some time at 120°C . To avoid this tedious and time-consuming operation, the author now suggests for study a method based upon the precipitation of tungstic acid by an excess of a solution of freshly-prepared stannous chloride (50 gm. crystals per 200 cc.) which precipitates the tungsten in the form of the tungsten oxide— W_2O_5 —the reaction being quite sensitive. In the experiment described by the author, 2 gm. of absolutely pure tungstic acid was dissolved in just enough concentrated ammonia water, and the solution diluted to 1 liter. To 50 cc. of this solution 20 cc. of the solution of stannous chloride is added, the mixture is boiled for a few minutes and the precipitate washed with warm water; then calcined and weighed. The flocculent precipitate settles rapidly in the water, so that the washing is quickly effected without loss. The results are quite accurate, as proven by a number of experiments described.—Chem. News, Feb. 2, 1912, 56; from Chem. Engineer, XIV, No. 24.

Turpentine Oils: Products of Oxidation

by *Atmospheric Air*.—American oil of turpentine, pinene from the same, Russian oil of turpentine, and sylvestrene prepared from the same, were subjected by C. T. Kingzett and R. C. Woodcock to the oxidizing effect of exposure to atmospheric air, in two series of experiments:

(1) By exposing the oils with an equal volume of water to a current of air at 65° C. for 24 hours, and then examining the aqueous solution.

(2) By exposing the oils previously dried over ignited calcium chloride, to a current of dry air at 65° to 69° C. during several weeks (when they showed the following specific gravities: Amer. turpentine oil, 0.931; pinene, 0.962; Russ. turpentine oil, 0.940; sylvestrene, 0.958), then shaking with half the volume of water, and examining the solution. The results were as follows:

First Experiment.

Yield of Oxidation products:

	Formic Acid	Acetic Acid
Amer. Oil.....	0.017%	0.038%
Pinene	0.14%	0.057%
Russ. Oil.....	0.026%	0.108%
Sylvestrene	0.16%	0.086%

	Formaldehyde	Acetaldehyde
Amer. Oil.....	Indications	None
Pinene	Indications	None
Russ. Oil.....	Indications	None
Sylvestrene	Indications	None

Second Experiment.

Yield of Oxidation products:

	Formic Acid	Acetic Acid
Amer. Oil.....	0.055%	0.024%
Pinene	0.054%	0.186%
Russ. Oil.....	0.13%	0.08%
Sylvestrene	0.059%	0.264%

	Formaldehyde	H ₂ O ₂
Amer. Oil.....	None	0.71 vol.
Pinene	Indications	0.348 vol.
Russ. Oil.....	None	1.06 vol.
Sylvestrene	Indications	0.532 vol.

—Chem. News, Jan. 19, 1912, 26-27.

Water: Decomposition by Magnesium at Ordinary Temperature.—Arthur W. Knapp observes that when magnesium is mixed with water no reaction is observed at ordinary temperatures, although the formation of magnesium hydroxide and the liberation of hydrogen is an exothermic reaction. This is commonly explained by saying that the film of hydroxide first formed covers the metal and retards further action. The author finds, however, if magnesium powder be added to ten times its weight of water, and then to this mixture such an amount of palladium

chloride as contains about one-hundredth part of the weight of magnesium used, a brisk evolution of hydrogen occurs. The temperature rises rapidly until the water boils and considerable white hydroxide is formed. The reaction is explained by the initial reduction of palladium chloride to metallic palladium, which acts as a catalytic agent. The small amount of magnesium chloride formed possibly also accelerates the reaction at first by dissolving the hydroxide; but the palladium, which has accelerated the decomposition of the water, soon accelerates its formation, for it is warm, and some of it rising on the bubble-films, which separate the hydrogen from the air, causes the hydrogen to ignite spontaneously.—Chem. News, May 31, 1912, 253.

Urine: Source of Error with Nylander's Test for Sugar.—Dr. E. Strauss has observed that certain substances interfere with the characteristic reaction for sugar by Nylander's test in the urine of diabetics (the production of a black color or precipitate by the reduction of the alkaline bismuth solution to metallic bismuth). Among these he finds iodthion, which when administered passes into the urine and is liable to form a complex compound with the bismuth salt, which protects the bismuth from the reducing action of the sugar. The author, furthermore, finds that iodthion does not interfere with the reaction produced by glucose upon Fehling's solution.—Pharm. Ztg., LVII (1912), No. 15, 148; from Munch. Med. Wschr., 1912, No. 2.

Urine: Source of Error in Trommer's Sugar-Test.—In accordance with the directions for carrying out Trommer's test for sugar in urine, a fairly concentrated solution of sodium hydroxide is added, followed by the careful addition of cupric sulphate, so long as the cupric hydroxide is redissolved, whereupon the liquid is heated until it begins to boil. Professor N. Schulz finds, however, that if the addition of the reagent is reversed, two periods arise which are liable to lead to deception: the first, due to great solvent power of urine on cupric hydroxide, and the second, due to the liability of reduction by normal urine after comparatively short boiling. The author, therefore, warns against a deviation from the order of the original directions, for those who still prefer to operate by Trommer's method, but recommends as preferable the method depending on the use of Fehling's solution, or better yet, Heine's modified solution.—Pharm. Ztg., LVII (1912), No. 15, 148; from Munch. Med. Wschr., 1912, No. 5.

Editorial Notes and Announcements

Committee on Publication:

JOS. W. ENGLAND, *Chairman*, Philadelphia, Pa.
 GEO. M. BERINGER.....Camden, N. J.
 F. W. MEISSNER.....La Porte, Indiana
 JOS. L. LEMBERGER.....Lebanon Pa.
 FREDERICK J. WULLING...Minneapolis, Minn.
Ex-Officio: THE EDITOR, ASSOCIATE EDITORS
 AND TREASURER.
 JAMES H. BEAL, *Editor*.....Scio, O.
 C. LEWIS DIEHL.....Louisville, Ky.
 Associate Editor and Reporter on the
 Progress of Pharmacy.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

In giving change of address, always give both the old and the new address.

RULES OF CENSORSHIP.

1. All contracts for advertising are accepted subject to revocation at the discretion of the Publication Committee.

2. No advertisement will be accepted for any article or service, the sale or furnishing of which is illegal in the state of publication or in any state in which the JOURNAL circulates.

3. Advertisements will not be accepted for articles belonging to the class of preparations commonly known as patent medicines, nor for any medicinal preparation advertised directly to the laity, or which is advertised in such a manner as to encourage self medication.

4. Copy which is vulgarly or extravagantly worded, or which makes extravagant claims of therapeutic virtues will not be accepted.

5. No advertisement will be accepted which by intent or inference would result in deceiving, defrauding or misleading the reader.

REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.
200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.
50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.
100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.
200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.
50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.
100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.
200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co.



N. A. R. D. CONTRIBUTION TO PROCTER FUND.

The N. A. R. D. is the latest contributor to the Procter Memorial Fund, to the extent of \$100.00.

This fund is held by the A. Ph. A. as trustee for the creation of a suitable memorial to the memory of William Procter, the Father of American Pharmacy. The exact character which the memorial is to take will depend upon the total amount raised. If it is to be in keeping with the unselfish and unassuming character of Procter, it should be of such a nature as will best advance the cause of professional pharmacy to which he was so bountiful a contributor.



A. PH. A. PAPERS IN CHEMICAL ABSTRACTS.

It may be of interest to those who are not members of the American Chemical Society to learn that papers published in the JOURNAL are abstracted and published under the division of Pharmaceutical Chemistry in *Chemical Abstracts*, one of the official publications of the A. C. S. The abstracts are prepared by M. I. Wilbert, the very efficient Secretary of the Committee on National Formulary.

SUNRISE FROM PIKE'S PEAK.

(By a Colorado Member of the A. Ph. A.)

The sky is clear and o'er the peak, a snowy
 mantle's drawn ,
 As in the distant east we see the first gray
 streaks of dawn.
 Below us cities sleep—'tis night; from us the
 night has fled,
 And soon o'er eastern skies we see a conflagration spread.
 Now brighter, redder grow the skies; the
 crimson light climbs higher,
 And far above the horizon, a fleecy cloud
 takes fire.
 At length the colored bands of light, around
 a circle play;
 And now a golden diadem, they crown the
 King of Day.
 Oh, scene of splendor—grand! sublime! O'er
 earth the sun appears!
 Fair nature's face seems wreathed in smiles—
 last night 'twas bathed in tears.
 From flowery dell to snowclad peak; in great
 and small degree,
 All nature's parts are made to blend in perfect harmony.
 Below us panoramas spread, with vegetation
 green;
 While on this snow-capped peak, millions of
 frosty diamonds gleam.
 Oh, thou great orb of heat and light, what
 magic in thy power
 To quicken now some dormant life; or ope'
 the budding flower!
 All nature feels thy magic touch; thy powers,
 her wants attend:
 And all mankind and all that live; for life
 on Thee depend!
 And e'en these cold and icy snows; when
 touched by thy warm light,
 Flow o'er the land in crystal streams; or, in
 the clouds take flight!
 Then who would nature's plan survey, or
 broader vision seek;
 Ascend this rocky mount and view the sunrise
 from Pike's Peak. E. G. F.

<>
 N. A. R. D. CONVENTION.

The date of the National Convention, August 12-16, being five weeks earlier than ever before makes our fiscal year that much shorter, and as our books close on July 31 for the fiscal or convention year, we hope you will see the importance of selecting your delegates, and also pushing the collection of

dues, so that the work of the N. A. R. D. will in no way be handicapped.

The convention this year will be one of the most important in our history, as legislative and other vital matters will come before the convention, and from present indications the convention will be very largely attended by the druggists and their families.

The druggists of Milwaukee are making preparations on an extensive scale to entertain the visitors. The convention hall is large and complete in every detail.

The drug show will be the largest in its history. —*N. A. R. D. Notes.*

<>
 CASPARI FOR CHIEF OF THE
 BUREAU OF CHEMISTRY.

A large number of those acquainted with the ability and character of Prof. Charles Caspari, Jr., have been urging him strongly for Chief of the Bureau of Chemistry. The President certainly could not make a wiser selection.

Professor Caspari possesses to the full the varied accomplishments which the occupant of that position should have: natural ability, training, experience, patience and diplomacy.

It is needless to say that Professor Caspari has not offered himself as a candidate for the position, and this mention of him is made in direct opposition to his expressed wishes.

The Bulletin Board

NATIONAL ASSOCIATION OF
 BOARDS OF PHARMACY.

To State Board Members:

GREETING—It is a pleasure to direct your attention to the annual meeting of the National Association of Boards of Pharmacy in the city of Denver, Colorado, on August 19, 20, 21, 22, and 23, 1912. This will be a very important occasion in many respects.

First. This will be a great reunion, for we hope to present an unbroken front, by having our entire family present, in that we will have a representative from every State Board in the Union.

Second. Our anticipations are strong in the belief that our active membership list will show material gains from 32 as at present to 40.

Third. Our associative membership will show the remaining nine states.

Fourth. We have a vital and important resolution to be presented by the National Association of Pharmacologists, looking to the authorization of a National Certificate, which will pass current in all the States. We shall ask for a liberal discussion of this suggestion.

Fifth. The report of the Syllabus Committee will be intensely interesting, for the reason that some of the best talent of our calling are engaged in this work.

Sixth. The report of our Executive Committee, the members of which are all prominent, distinguished and successful business men of our calling, will bristle with entertaining and captivating facts, unfolding an accumulation of useful and valuable data.

Seventh. A special request is urged upon each representative of active Board members, to come prepared to maintain their faith in our organization, relating personal experiences of the advantages of reciprocity and the benefits of membership.

Eighth. A prize is offered for the best paper setting forth the virtues, advantages and great good accomplished by the National Association of Boards of Pharmacy, since its organization and the individual good each Board may derive therefrom.

Ninth. The association, fellowship and friendships established between delegates, resulting from these annual gatherings, are of immeasurable good and of life-long tenure.

Tenth. Interchange of ideas, experiences related, and the solving of the various problems that confront many State Boards, is a valuable asset.

Eleventh. There is absolutely no sane reason why reciprocity should not prevail in every State in the Union. Those entertaining objections will be gladly heard.

Twelfth. I will hazard the opinion that there is no tenable ground, upon which any State can base a refusal, continuing without the pale of influence of this Association. There are no conditions or contentions, that any State can maintain, that justifies their insistent declination, to become active members. If it is your law, amend it. If it is a professional reason, alter and amend the By-Laws and Constitution of the National Body, so that a more rigid demand shall be made of each active member as to the standard of examinations maintained. If a busi-

ness one, inject a little charity; this will insure a conversion of the refractory, dissenting State. Let's get right and together.

Thirteenth. Be liberal, be earnest, be sincere, be with us, for you are most cordially and fraternally welcome.

Yours in the faith,

R. H. WALKER, President.

TENTATIVE PROGRAM N. A. B. P.

TUESDAY, AUGUST 20, 1912.

FIRST SESSION.

4:00 P. M.

- (1) Address of welcome by the Mayor.
- (2) Response by Wm. Mittelbach, Boonville, Mo.
- (3) Address of welcome by some druggist of Denver.
- (4) Response by L. C. Lewis, Tuskegee, Ala.
- (5) Roll call.
- (6) Appointment of credentials committee.
- (7) Arrangement of program to suit departments.
- (8) Announcements.

WEDNESDAY MORNING, AUGUST 21, 1912.

SECOND SESSION.

9:00 A. M.

- (1) President's address.
- (2) Report Secretary-Treasurer.
- (3) Mr. Engstrom's Report to National Association Board of Pharmacy.
- (4) Report standing committees.
- (5) Appointment of nominating and other committees.

WEDNESDAY AFTERNOON.

THIRD SESSION.

2:00 P. M.

- (1) Report condition of Pharmacy by delegates.
- (2) Announcements.

WEDNESDAY EVENING.

NIGHT SESSION.

8:00 P. M.

Joint sessions as may be arranged.

THURSDAY MORNING.

FIFTH SESSION.

9:00 A. M.

- (1) Unfinished business.
- (2) New business.
- (3) Election and installation of officers.
- (4) Good of Pharmacy in general.
- (5) Adjournment.

Any of the above may be altered at the discretion of the President and Secretary, and Executive Committee.

WHY NOT SUMMER MEETINGS?

While casually examining the by-laws of several local branches of the American Pharmaceutical Association, I was much surprised to find that each dispensed with summer meetings, just as does the one to which I belong. Members could not enlighten me as to the cause for this in our branch; whether precedent or because the weather is hot in the summer. Most of them guessed the latter.

To me, neither of these reasons appeal. Pharmacists do not cease to labor, or to plan, or to experiment, or to progress, just because it is warm. Most of them are just as busy in summer as in winter. And how may others learn of their successful experimental work except by the publicity of their meetings, or through the publication of their results in some journal. What few will trouble to write out such matter for publication?

The pharmacy of the summer is more perplexing than that of the winter. Most preparations are harder to preserve in the hot months. Many require changes in their formulas, and others present ever trying problems for elegant dispensing. Special summer month problems are constantly presenting themselves for solution.

Sometimes we hear of these troubles and their remedies at a winter meeting. But the memory has been dulled as to essential and interesting details, and the subject enthuses little because it is of problems of the past. A subject can never be so readily discussed as when bolstered by the enthusiasm of recent observation and successful experimentation. And to a listener, could anything be more interesting than a bridge over one's own immediately perplexing difficulties?

But you, too, may think it is too hot for meetings. Why not have morning or afternoon sessions in the open air? Do not the conventions all meet in the summer, and they do not, usually, have the advantage of open-air meetings? No city, or town, is devoid of some park, or other place, within short ride by train or trolley or automobile where meetings may be held. Seclusion can always be had in the most public of places.

If no private ground is available, and the meetings must be held in a public park, the owner or manager will always use especial effort to make such a meeting pleasant, and will generally outdo himself in courtesy and accommodations. It is a compliment and an

advertisement to him, so why shouldn't he do the best in his power? And this is most emphatically true, when luncheon or refreshments are ordered of him.

Many educational excursions may also be made. Manufacturing chemists and pharmacists make professional visitors exceedingly welcome, and a trip each year to a particular laboratory is worthy of the most trying heat, for new processes are constantly being developed, new apparatus and machinery installed, and new products being brought to the public notice.

Trips to farms where drug plants are cultivated constitute most interesting side trips. There are numbers of these near the cities, both under government and private control.

To me the possibilities of these meetings are so great that they can not be measured, and the excuses for not having them so small that they are negligible. If you are an enthusiast, take the matter up in your local branch, and you will find that nearly everybody else has wondered why the meetings have not been held, and will join you in the movement to have them, and to make them a success.

HENRY B. FLOYD.



INTERSTATE ASSOCIATION OF BOARDS OF PHARMACY.

Members of the State Boards of Pharmacy from Illinois, Indiana, Minnesota, Ohio and Wisconsin met in a regular session of the Interstate Association of Boards of Pharmacy at Columbus, Ohio, June 17th and 18th.

At the invitation of the Ohio Board of Pharmacy the visiting members attended the examination of a large class of pharmacists, which, at the time, was being conducted by the Ohio Board. A banquet was tendered the visiting members at Hotel Chittenden, Monday evening, June 17th.

The Interstate Association of Boards of Pharmacy was organized nearly four years ago, the object being to establish uniform requirements for registration, which would make possible the interchange of certificates between the states represented in the association.

By visiting each other, at times when examinations are held, by the Boards visited, the Boards of the respective states are afforded splendid opportunities to compare notes and to hold conferences where measures toward a gradual advancement of the

standard of examinations may be thoroughly discussed. At the same time the Boards, belonging to this association, are working toward the end when the requirements for a Pharmacist's certificate may be on the same level in all the states.

The Boards of Pharmacy of the following states are members of the Interstate Association, Illinois, Indiana, Kentucky, Michigan, Minnesota, Ohio, Wisconsin, and these Boards will issue certificates of registration, without examination, to applicants who are complying satisfactorily with the requirements for reciprocal registration.

The President of the Interstate Association of Boards of Pharmacy is Mr. Burton Cassaday, of Terre Haute, Ind., member of the Indiana Board of Pharmacy. The Vice President is Mr. Robin H. White, of Mt. Sterling, Ky., member of the Kentucky Board of Pharmacy, and the Secretary-Treasurer, Mr. Otto J. S. Boberg, of Eau Claire, Wis., member of the Wisconsin Board of Pharmacy.

OTTO J. S. BOBERG, Secretary.



U. S. PUBLIC HEALTH AND MARINE HOSPITAL SERVICE.

Recent changes in Pharmacists' assignments, etc.

Board of medical officers convened to meet at the Marine Hospital, Savannah, Ga., at the call of the chairman to examine Pharmacist L. G. Smith, to determine his fitness for promotion to the grade of Pharmacist of the second class. Detail for the board: Passed Assistant Surgeon C. H. Lavinder, chairman; Acting Assistant Surgeon A. B. Cleborne, recorder. June 21, 1912.

Keen, W. H., Pharmacist. Granted 27½ days' leave of absence to begin between July 5 and 15, 1912. June 26, 1912.

Brown, F. L., Pharmacist. Directed to proceed to San Juan, P. R., and report to Passed Assistant Surgeon R. H. Creel for special temporary duty in connection with plague suppressive measures. July 2, 1912.

Spangler, L. C., Pharmacist. Directed to proceed to Delaware Breakwater Quarantine, Lewes, Del., and report to Surgeon W. G. Stimpson for duty in care of detained passengers on the steamer Haverford on account of smallpox. July 8, 1912.

Sterns, C. O., Pharmacist. Granted one day's leave of absence, June 8, 1912, under

paragraph 210, Service Regulations. July 2, 1912.

Hepler, G. K., Pharmacist. Granted 24 days' leave of absence from August 5, 1912. July 9, 1912.

Council Business

COUNCIL LETTER NO. 22.

PHILADELPHIA, July 6, 1912.

Members of the Council:

Motion 45 (Postponement of Publication of the Year Book (Report on the Progress of Pharmacy) for 1911 until after the Denver (1912) Meeting) has received a majority of affirmative votes.

Motion No. 46 (Election of Members). You are requested to vote on the following applications for membership:

No. 236. Wm. Fankhauser, M. D., 971 Stibbins Ave., New York, N. Y., rec. by Caswell A. Mayo and Theodore Weicker.

No. 237. Herbert Sharman, Sergeant 1st Class, Hospital Corps, U. S. A., Ft. Sill, Okla., rec. by Wm. B. Day and J. W. England.

No. 238. Michael Hiltz, Hospital Corps, U. S. Army, Fort Mills, Corregidor, P. I., rec. by Wm. B. Day and Clarence C. Young.

No. 239. Henry L. Begley, Sergeant Hospital Corps, U. S. Army, care Chief Surgeon's Office, Manila, P. I., rec. by Wm. B. Day and Charles C. Young.

No. 240. James R. Merryman, Sergeant Hospital Corps, U. S. Army, care Chief Surgeon's Office, Manila, P. I., rec. by Nels Casmussen and Chas. C. Young.

No. 241. William Joseph Murphy, Sergeant Hospital Corps, U. S. Army, 175 Calle Conception, Manila, P. I., rec. by Wm. B. Day and Chas. C. Young.

No. 242. Adolph Jole, Sergeant Hospital Corps, Fort Mills, Corregidor, P. I., rec. by Wm. B. Day and Chas. C. Young.

No. 243. David Goodman, Sergeant Hospital Corps, U. S. Army, Fort Mills, Corregidor, P. I., rec. by Wm. B. Day and Chas. C. Young.

No. 244. Elmer Jeen, Sergeant Hospital Corps, Fort Mills, Corregidor, P. I., rec. by Wm. B. Day and Chas. C. Young.

No. 245. Joseph Stahl, Sergeant Hospital Corps, U. S. A., Fort Mills, Corregidor, P. I., rec. by Wm. B. Day and Chas. C. Young.

No. 246. Edward John Rihn, 938 5th Ave., Ford City, Pa., rec. by J. A. Koch and A. F. Judd.

No. 247. Peter A. Kuenzig, 4514 Liberty Ave., Pittsburgh, Pa., rec. by J. A. Koch and Fred J. Blumenschein.

No. 248. Alphonse Major, 461 Pearl St., New York, N. Y., rec. by R. G. Eccles, M. D., and John G. Godding.

No. 249. Amos Wilson Clark, Sergeant 1st Class, Hospital Corps, U. S. A., Fort William McKinley, Rizal, P. I., rec. by Francis J. Eisenman and Chas. C. Young.

No. 250. William Arthur Harvey, 26 St. Andrews' Place, Brooklyn, N. Y., rec. by Otto Raubenheimer and Hugh Craig.

No. 251. Edward Joseph McTague, 2601 Jackson St., Seattle, Wash., rec. by Charles W. Johnson and A. H. Dewey.

No. 252. Frederick William Archer, 1181 Washington St., Dorchester, Mass., rec. by C. H. Packard and John G. Godding.

No. 253. Joseph Vincent Delgado, Colon, Republic of Panama, C. A., rec. by J. T. McGill and E. A. Ruddiman.

No. 254. John Arthur Riley, 301 Livingston St., Brooklyn, N. Y., rec. by J. H. Beal and J. W. England.

No. 255. Arthur Malcolm Henry, Tallahassee, Florida, rec. by Theo. D. Wetterstroem and J. W. England.

No. 256. Samuel Solomon Kovaco, 201 Broad St., Johnstown, Pa., rec. by J. A. Koch and Fred J. Blumenschein.

No. 257. Cloyde W. Snyder, 5301 Indiana Ave., Chicago, Ill., rec. by Clyde M. Snow and Wm. B. Day. (Awarded for Excellence in Pharmacy, University of Illinois, School of Pharmacy.)

No. 258. George D. Feldner, 3218 Magazine St., New Orleans, La., rec. by F. C. Godbold and C. D. Sauvinet.

No. 259. Emiel Schulz, Sergeant 1st Class, Hospital Corps, Fort Shafter, Honolulu, Hawaii Territory, rec. by H. J. Weber and Wm. B. Day.

No. 260. Christopher Hermann, Sergeant 1st Class, Hospital Corps, Fort Shafter, Honolulu, Hawaii Territory, rec. by H. J. Weber and Wm. B. Day.

No. 261. Harry Garfield Young, 7937 Maderia St., Pittsburgh, Pa., rec. by J. A. Koch and A. F. Judd.

No. 262. James Lee, 514 American Bank Building, Seattle, Wash., rec. by C. W. Johnson and Albert H. Dewey.

No. 263. Alfred Diedrich, 336 4th St., Union Hill, N. J., rec. by Otto Raubenheimer and Hugh Craig.

No. 264. M. Lee Alberts, 357 Locust St., Valparaiso, Ind., rec. by G. D. Timmons and A. W. Linton.

No. 265. Rufus C. Arbaugh, Jasper, Ark., rec. by G. D. Timmons and A. W. Linton.

No. 266. Russell C. Wilcox, Widholm Hotel, Washington St., Gary, Ind., rec. by G. D. Timmons and A. W. Linton.

No. 267. Murray Chisholm Colcleugh, 652 Notre Dame Ave., Winnipeg, Province Manitoba, Canada, rec. by H. E. J. Bletcher and Charles W. Campbell.

No. 268. William A. Zimmer, 119 Main St., Lamar, Col., rec. by Chas. M. Ford and S. L. Bresler.

No. 270. Geo. Albert Cuning, Las Animas, Col., rec. by C. M. Ford and S. L. Bresler.

No. 272. T. F. Cannon, R. 508, 160 N. 5th Ave., Chicago, Ill., rec. by Wm. B. Day and J. W. England.

No. 273. Paul Grace, West Salem, Ill., rec. by John C. Wheatcroft and Wm. B. Day.

No. 274. John Stuchlik, 3859 W. 26th St., Chicago, Ill., rec. by C. H. Avery and Wm. B. Day.

No. 275. Samuel Ross Woods, 110 South Main St., Lomar, Col., rec. by Chas. M. Ford and S. L. Bresler.

No. 276. Alice Caden, care Caden Drug Co., Lexington, Ky., rec. by Jas. H. Martin and Linwood A. Brown.

No. 277. Jesse School Tyson, 354 Washington Ave., E. Downingtown, Pa., rec. by G. H. Meeker and Chas. E. Vanderkleed (Prize of Dr. G. H. Meeker, Medico-Chirurgical College, Philadelphia).

No. 278. Thos. Keefe, Clarks, Neb., rec. by Charles R. Sherman and Wm. B. Day.

No. 279. Fred Anderson Miller, 1939 Ashland Ave., Indianapolis, Ind., rec. by Charles R. Eckler and Frank R. Eldred.

No. 280. Otto Alpers, 282 City Island Ave.,

City Island, N. Y., rec. by William C. Alpers and J. H. Beal.

No. 281. Albert E. Lerche, 325 Main St., Springfield, Mass., rec. by C. H. Packard and Theodore J. Bradley.

No. 282. William Hardie, 637 So. Main St., Fall River, Mass., rec. by John G. Godding and Albert J. Brunelle.

No. 283. Ernest Dalton, 212 Exchange St., Chicopee, Mass., rec. by Irving P. Gammon and John G. Godding.

No. 284. Ira Hotchkiss Pierce, Salem, Iowa, rec. by Wm. J. Teeters and R. A. Kuever. (Prize of Prof. W. J. Teeters, University of Iowa, College of Pharmacy).

No. 285. William Osborne, Jr., Danforth, Me., rec. by H. M. Whelpley and J. W. England. (Prize for highest rank in Pharmacy at University of Maine, Department of Pharmacy).

J. W. ENGLAND,

Secretary of the Council.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,

From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

DR. R. C. HOLMES,

From 1619 Summer St., Philadelphia, Pa.
To No. 1 Monroe Place, Brooklyn, N. Y.

MARTIN LARSON,

From Callender, Iowa.
To Plover, Iowa.

SGT. M. J. HOGAN,

From Camp McGrath, Batangas, P. I.
To Ft. Wm. McKinley, Rizal, P. I.

CONSTANTINE TRONLER,

From 228 W. Breck, Louisville, Ky.
To 232 W. Breck, Louisville, Ky.

GLENN F. COLEMAN,

From 1477 E. 93d St., Cleveland, O.
To 4172 E. 94th St., Cleveland, O.

CLARENCE R. SIZEMORE,

From 23 S. 1st St., St. Louis, Mo.
To 177 Morgan St., St. Louis, Mo.

S. S. KOVACO,

From 201 Broad St., Johnstown, Pa.
To Duquesne, Pa.

WILBUR L. SCOVILLE,

From 805 Second Ave., Detroit, Mich.
To 81 Melbourne Ave., Detroit, Mich.

MARTIN E. TITUS,

From 570 Dower Ave., Milwaukee, Wis.
To 235 13th St., Milwaukee, Wis.

G. L. SECORD,

From 2306 Taylor St., Chicago, Ill.
To 4654 Washington Blvd., Chicago, Ill.

OSCAR OLDBERG,

From N. W. University Bldg., Chicago, Ill.
To 7808 Union Ave., Chicago, Ill.

MATT R. NOREEN,

From Ft. Gibbon, Tonona, Alaska.
To Presidio, San Francisco, Cal.

THOMAS M. MCKENHOE,

From 417 Stapleton Bldg., Billings, Mont.
To Box 429, Billings, Mont.

CHESTER A. DUNCAN,

From Baylor University, Dallas, Texas.
To 3416 Junius St., Dallas, Texas.

THOMAS WHITEFIELD,

From 362 Wabash Ave., Chicago, Ill.
To 545 S. Wabash Ave., Chicago, Ill.

GEORGE H. PAUL, Sgt. 1st Class,

From Camp Jossman, Guimaras, P. I.
To Margosatwig, Mindanao, P. I.

THE SUCCESS OF FAILURE.

"In our superior knowledge we are disposed to speak in a patronizing tone of the follies of the alchemists of old. But their failure to transmute the baser metals into gold resulted in the birth of chemistry. They did not succeed in what they attempted, but they brought into vogue the natural processes of sublimation, filtration, distillation, and crystallization; they invented the alembic, the retort, the sand-bath, the water-bath, and other valuable instruments. To them is due the discovery of antimony, sulphuric ether and phosphorus, the cupellation of gold and silver, the determining of the properties of saltpetre and its use in gunpowder, and the discovery of the distillation of essential oils. This was the success of failure, a wondrous process of Nature for the highest growth,—a mighty lesson of comfort, strength, and encouragement if man would only realize and accept it."—*William George Jordan.*

The American Pharmaceutical Association

Organized: Philadelphia, 1852.

Incorporated: Washington, D. C., 1888.

Sixtieth Annual Convention, Denver, Colo., August 19, 1912.

OFFICIAL ROSTER FOR 1911-1912.

GENERAL OFFICERS.

President—JOHN G. GODDING, 278 Dartmouth St., Boston, Mass.*Honorary President*—HENRY BIROTH,* 130 Vermont St., Blue Island, Ill.*First Vice President*—WILHELM BODEMANN, Hyde Park, Chicago, Ill.*Second Vice President*—CHARLES M. FORD, 1236 Ogden St., Denver, Col.*Third Vice President*—ERNEST BERGER, Tampa, Fla.*Treasurer*—HENRY M. WHELPLEY, 2342 Albion Place, St. Louis, Mo.*General Secretary and Editor of the Journal*—JAMES H. BEAL, Scio, Ohio.*Reporter on the Progress of Pharmacy*—C. LEWIS DIEHL, 932 Cherokee Road, Louisville, Ky.*Local Secretary*—CHARLES M. FORD, Denver, Col.

OFFICERS OF THE COUNCIL FOR 1911-1912.

Chairman—EUGENE G. EBERLE, 1804 Jackson St., Dallas, Tex.*Vice Chairman*—JAMES M. GOOD, 2601 Olive St., St. Louis, Mo.*Secretary*—JOSEPH W. ENGLAND, 415 N. 33d St., Philadelphia, Pa.

MEMBERS OF THE COUNCIL FOR 1911-1912.

(Elected by the Association.)

OSCAR OLDBERG, Chicago, Ill.....	Term expires 1912
CHARLES E. CASPARI, St. Louis, Mo.....	Term expires 1912
GEORGE M. BERINGER, Camden, N. J.....	Term expires 1912
J. H. BEAL, Scio, O.....	Term expires 1913
J. P. REMINGTON, Philadelphia, Pa.....	Term expires 1913
H. H. RUSBY, Newark, N. J.....	Term expires 1913
E. G. EBERLE, Dallas, Tex.....	Term expires 1914
GEORGE F. PAYNE, Atlanta, Ga.....	Term expires 1914
JAMES M. GOOD, St. Louis, Mo.....	Term expires 1914

(Elected by Local Branches.)

LEWIS C. HOPP, Northern Ohio Branch, Cleveland.....	Term expires 1911
E. H. LAPIERRE, New England Branch, Cambridge, Mass.....	Term expires 1912
JOHN B. THOMAS, Baltimore Branch, Baltimore.....	Term expires 1912
F. J. WULLING, Northwestern Branch, Minneapolis.....	Term expires 1912
WILLIAM R. WHITE, Nashville Branch, Nashville.....	Term expires 1912
AMBROSE HUNSBERGER, Philadelphia Branch, Philadelphia, Pa.....	Term expires 1912
J. A. KOCH, Pittsburgh Branch, Pittsburgh.....	Term expires 1914
PHILIP ASHER, New Orleans Branch, New Orleans.....	Term expires 1914
JOHN A. MARTIN, Denver Branch, Denver.....	Term expires 1914
HENRY B. FLOYD, City of Washington Branch, Washington D. C.....	Term expires 1914
THOMAS D. McELHENIE, New York Branch.....	Term expires 1915
ALBERT H. CLARK, Chicago Branch.....	Term expires 1915
WILLIAM K. ILHARDT, St. Louis Branch.....	Term expires 1915

(Members Ex-Officio.)

The President, Vice Presidents, General Secretary, Treasurer, Reporter on the Progress of Pharmacy, Secretary of the Council, Local Secretary, Historian, and the Chairmen of the Sections.

COMMITTEES OF THE COUNCIL.

COMMITTEE ON FINANCE.

(Elected by the Council.)

J. A. KOCH, *Chairman*.
OTTO F. CLAUS.

E. H. LAPIERRE.

* Deceased.

COMMITTEE ON PUBLICATION.

(Elected by the Council.)

J. W. ENGLAND, *Chairman*.

F. J. WULLING.

G. M. BERINGER.

J. L. LEMBERGER.

F. W. MEISSNER, JR.

The Editor, Associate Editors, and Treasurer, *ex-officio*.**COMMITTEE ON CENTENNIAL FUND.**

(Elected by the Council.)

JOHN G. GODDING, *Chairman*.

J. A. KOCH.

JAMES H. BEAL.

AUDITING COMMITTEE.

(Appointed by the Chairman of the Council.)

OTTO F. CLAUS, *Chairman*.

SOLOMON BOEHM.

FRANCIS HEMM.

COMMITTEE ON INVESTED AND TRUST FUNDS.

(Appointed by the Chairman of the Council.)

JAMES H. BEAL.

THOMAS P. COOK.

E. G. EBERLE.

H. M. WHELPLEY, *ex-officio*.**COMMITTEE ON MEMBERSHIP.**

JOHN C. WALLACE.

LEWIS C. HOPP.

CHARLES M. FORD.

WILLIAM O. RICHTMANN.

OTTO RAUBENHEIMER.

CHARLES E. CASPARI.

WILLIAM R. WHITE.

J. W. ENGLAND, *Secretary*.**COMMITTEE ON TRANSPORTATION.**

(Elected by the Council.)

CASWELL A. MAYO, *Chairman*.

CHARLES B. WHILDEN.

WILHELM BODEMANN.

F. C. GODBOLD.

H. M. WHELPLEY.

W. S. ELKINS, JR.

CHARLES G. MERRELL.

W. A. HOVER.

F. J. WULLING.

C. HERBERT PACKARD.

CHAS. CASPARI, JR.

L. C. HOPP.

OFFICERS OF THE SECTIONS.

(Elected by the several Sections.)

SECTION ON SCIENTIFIC PAPERS.*Chairman*—W. O. RICHTMANN, Satsuma Heights, Fla.*Secretary*—CHARLES H. LAWALL, 39 S. 10th St., Philadelphia, Pa.*Associate*—F. R. ELDRED, 3323 Kenwood Ave., Indianapolis, Ind.**SECTION ON EDUCATION AND LEGISLATION.***Chairman*—JOHN C. WALLACE, 113 E. Washington St., New Castle, Pa.*Secretary*—WILBER J. TEETERS, Iowa City, Ia.*Associates* { H. D. KNISELEY, Checotah, Okla.

{ PHILIP ASHER, 1606 St. Charles Ave., New Orleans, La.

{ L. D. HAVENHILL, Lawrence, Kan.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.*Chairman*—P. HENRY UTECH, 209 Chestnut St., Meadville, Pa.*Secretary*—J. LEON LASCOFF, Lexington and 83d St., New York.*Associate*—W. H. GLOVER, Lawrence, Mass.**SECTION ON COMMERCIAL INTERESTS.***Chairman*—ERNEST BERGER, Tampa, Fla.*Secretary*—D. W. RAMSAUR, Palatka, Fla.*Associates* { B. E. PRITCHARD, 1211 Bessemer Bldg., Pittsburgh, Pa.

{ LOUIS BERGER, 470 Lenox Ave., New York.

{ FRANK H. CARTER, 776 Massachusetts Ave., Indianapolis, Ind.

SECTION ON HISTORICAL PHARMACY.

Chairman—OTTO RAUBENHEIMER, 1341 Fulton St., Brooklyn, N. Y.

Secretary—CASWELL A. MAYO, 62 W. Broadway, New York.

Historian—EDWARD KREMERS, Madison, Wis.

OFFICERS OF THE LOCAL BRANCHES, 1911-1912.

(The General Secretary should have prompt notice of corrections and changes.)

CHICAGO BRANCH.

President—J. H. WELLS.

Second Vice President—WILLIAM GRAY.

First Vice President—S. K. SAAS.

Third Vice President—MRS. M. M. GRAY.

Secretary-Treasurer—W. B. DAY.

Committee Chairmen.

Practical Pharmacy—J. A. BECKER.

Publicity—OTTO BRUDER.

Medical Relations—BERNARD FANTUS.

Legislation—J. P. CROWLEY.

Council Representative—A. H. CLARK.

NORTHERN OHIO BRANCH.

President—L. C. HOPP.

Vice President—W. T. HANKEY.

Secretary-Treasurer—T. BERNARD TANNER.

PHILADELPHIA BRANCH.

President—F. E. STEWART.

Treasurer—WILLIAM MCINTYRE.

First Vice President—SAMUEL C. HENRY.

Secretary—AMBROSE HUNSEBERGER.

Second Vice President—E. FULLERTON COOK.

Council Representative—ROBERT C. CADMUS.

Committee Chairmen.

Practical Pharmacy—PAUL L. MCCONOMY.

Professional Relations—FRANK E. MORGAN.

Membership—OTTO KRAUS.

PHILADELPHIA BRANCH.

(Scientific Section.)

President—C. H. KIMBERLY.

Secretary—F. P. STROUP.

PITTSBURG BRANCH.

President—ANDREW CAMPBELL.

Third Vice President—LEONARD K. DARBAKER.

First Vice President—LOUIS SAALBACH.

Secretary—B. E. PRITCHARD.

Second Vice President—PETER G. WALTER.

Treasurer—P. HENRY UTECH.

Committee Chairmen.

Membership—CHARLES E. WILLETT.

Medical Relations—GEORGE W. KUTSCHER.

Practice—FREDERICK J. BLUMENSCHIN.

Education and Legislation—JAMES H. BEAL.

CITY OF WASHINGTON BRANCH.

President—LEWIS FLEMER.

Secretary and Council Member—HENRY B.

First Vice President—LYMAN F. KEBLER.

FLOYD.

Second V. P.—HENRY E. KALUSOWSKI.

Treasurer—WYMOND H. BRADBURY.

Committee Chairmen.

Membership—HERBERT C. EASTERDAY

Medical Relations—FRANK C. HENRY.

Legislation—WILLARD S. RICHARDSON.

Scientific Communications—RODNEY H. TRUE.

Publicity—MARTIN I. WILBERT.

NEW ENGLAND BRANCH.

President—CHARLES F. NIXON.

Vice President—ALBERT W. MESERVE.

Secretary-Treasurer—R. ALBRO NEWTON.

Committee Chairmen.

Professional Relations—FRANK F. ERNST.

Membership—WILLIAM H. GLOVER.

BALTIMORE BRANCH.*President*—E. F. KELLY.*Vice President*—W. M. FOUIL.*Secretary-Treasurer*—E. W. HODSON.*Committee Chairmen.**Membership*—H. A. B. DUNNING.*Science and Practice*—H. P. HYNSON.*Professional Relations*—J. F. HANCOCK*Education and Legislation*—J. E. HANCOCK.**DENVER BRANCH.***President*—JOHN BEST*Second Vice President*—C. H. SKINNER*First Vice President*—L. B. BRIDAHAM.*Secretary-Treasurer*—F. W. NITARDY**NEW YORK BRANCH.***President*—GEO. C. DIEKMAN.*Vice President*—C. D. BIGELOW.*Treasurer*—JOSEPH WEINSTEIN.*Secretary*—HUGH CRAIG.*Committee Chairmen.**Progress of Pharmacy*—OTTO RAUBENHEIMER.*Professional Relations*—J. LEON LASCOFF.*Education and Legislation*—THOS. P. COOK.*Membership*—CASWELL A. MAYO.**NASHVILLE BRANCH.***President*—J. O. BURGE.*Second Vice President*—D. J. KUHN.*First Vice President*—E. A. RUDDIMAN.*Treasurer*—C. C. YOUNG.*Secretary*—WILLIAM R. WHITE.*Committee Chairmen.**Membership*—C. C. YOUNG.*Legislation*—IRA B. CLARK.*Trade Interests*—M. E. HUTTON.*National Formulary*—R. L. EVES.**NORTHWESTERN BRANCH.***President*—STEWART GAMBLE.*Secretary-Treasurer*—EDWIN L. NEWCOMB.**GENERAL COMMITTEES.**

(Appointed by the President.)

COMMITTEE ON U. S. P.

H. A. B. DUNNING.....	Term expires 1912	L. D. HAVENHILL, <i>Chm</i>	Term expires 1917
CHARLES E. CASPARI.....	Term expires 1913	L. F. KEBLER.....	Term expires 1918
A. B. LYONS.....	Term expires 1914	HARVEY A. SELL.....	Term expires 1919
WILLIAM MITTELBACH....	Term expires 1915	E. FULLERTON COOK.....	Term expires 1920
REID HUNT.....	Term expires 1916	E. H. LAPIERRE.....	Term expires 1921

BOARD OF CANVASSERS.

WILLIAM A. FROST, <i>Chairman</i> , St. Paul, Minn.	TRUMAN GRIFFEN.....	Minneapolis, Minn.
ALBERT D. THOMPSON.....	Minneapolis, Minn.	

COMMITTEE ON UNOFFICIAL STANDARDS.

(Elected by the Council.)

HENRY KRAEMER, 424 S. 4th St., Philadelphia.....	Term expires 1912
EUSTACE H. GANE, 91 Fulton St., New York.....	Term expires 1912
B. L. MURRAY, Care Merck & Co., New York.....	Term expires 1912
W. A. PUCKNER, 535 Dearborn Ave., Chicago.....	Term expires 1912
OTTO RAUBENHEIMER, 1341 Fulton St., Brooklyn.....	Term expires 1913
GEORGE D. ROSENGARTEN, P. O. Box 1625, Philadelphia.....	Term expires 1913
CHARLES E. VANDERKLEED, 200 1st Ave., Collingswood, N. J.....	Term expires 1913
M. I. WILBERT, 728 20th St., N. W., Washington, D. C.....	Term expires 1913
GEORGE M. BERINGER, (<i>Chairman</i>), 501 Federal St., Camden, N. J.....	Term expires 1914
H. H. RUSBY, 776 De Graw Ave., Newark, N. J.....	Term expires 1914
F. R. ELDRED, 3323 Kenwood Ave., Indianapolis.....	Term expires 1914
JOHN M. FRANCIS, 240 Seyburn Ave., Detroit.....	Term expires 1914
J. A. KOCH, Bluff and Pride Sts., Pittsburgh.....	Term expires 1915
THOMAS P. COOK, 114 William St., New York.....	Term expires 1915
L. D. HAVENHILL, Lawrence, Kan.....	Term expires 1915
E. L. NEWCOMB, 527 5th Ave., S. E., Minneapolis.....	Term expires 1915

COMMITTEE ON THE NATIONAL FORMULARY.

(Elected by the Council.)

C. LEWIS DIEHL, <i>Chairman</i>	Louisville, Ky.	H. A. B. DUNNING.....	Baltimore, Md.
CLYDE M. SNOW.....	Chicago, Ill.	SAMUEL L. HILTON.....	Washington, D. C.
A. B. STEVENS.....	Ann Arbor, Mich.	CHAS. H. LA WALL.....	Philadelphia, Pa.
OTTO RAUBENHEIMER.....	Brooklyn, N. Y.	GEO. M. BERINGER.....	Camden, N. J.
LEONARD A. SELTZER.....	Detroit, Mich.	M. I. WILBERT.....	Washington, D. C.
HARRY V. ARNY.....	New York	W. L. SCOVILLE.....	Detroit, Mich.
E. FULLERTON COOK.....	Philadelphia, Pa.	WILLIAM A. HALL.....	Detroit, Mich.
ADAM WIRTH.....	New Orleans, La.		

PHARMACEUTICAL SYLLABUS.

(Appointed by the President.)

CHARLES CASPARI, JR., 6 E. Franklin St., Baltimore.....	Term expires 1912
E. G. EBERLE, 1804 Jackson St., Dallas, Tex.....	Term expires 1913
HARRY B. MASON, P. O. Box 484, Detroit.....	Term expires 1914
GEORGE M. BERINGER, 501 Federal St., Camden, N. J.....	Term expires 1915
WILLIAM B. DAY, Michigan Blvd., and 12th St., Chicago.....	Term expires 1916
WILLIS B. GREGORY, 530 Main St., Buffalo.....	Term expires 1917
HENRY L. TAYLOR, 2 Woodlawn Ave., Albany, N. Y.....	Term expires 1918

COMMITTEE ON TIME AND PLACE OF NEXT MEETING.

(Appointed by the President.)

J. O. BURGE, <i>Chairman</i>	Nashville	F. C. GODBOLD.....	New Orleans
GEORGE B. KAUFFMAN.....	Columbus, O.	THOMAS F. MAIN.....	New York
J. C. Burton.....	Stroud, Okla.		

COMMITTEE ON NATIONAL LEGISLATION.

(Appointed by the President.)

W. S. RICHARDSON, <i>Chm.</i>	Washington, D. C.	F. A. HUBBARD.....	Boston, Mass.
JOHN C. WALLACE.....	New Castle, Pa.	E. G. EBERLE.....	Dallas, Tex.
CHRISTOPHER KOCH.....	Philadelphia, Pa.		

SPECIAL COMMITTEES.

(Appointed by the President.)

ON STATUS OF PHARMACISTS IN GOVERNMENT SERVICE.

GEORGE F. PAYNE, <i>Chairman</i>	Atlanta	W. R. WHITE.....	Nashville
H. H. RUSBY.....	Newark	W. B. DAY.....	Chicago
OTTO RAUBENHEIMER.....	Brooklyn		

WILLIAM PROCTER MEMORIAL FUND.

J. F. HANCOCK, <i>Chairman</i>	Baltimore	F. C. RYAN.....	Detroit
CHARLES CASPARI, JR.....	Baltimore	THOMAS F. MAIN.....	New York
A. R. L. DOHME.....	Baltimore	PARKER C. COOK.....	Baltimore
B. F. FAIRCHILD.....	New York	J. K. LILLY.....	Indianapolis
CASWELL A. MAYO.....	New York	H. S. WELLCOME.....	London, Eng.
E. G. EBERLE.....	Dallas	GEORGE MERRELL.....	Cincinnati
J. L. LENGFELD.....	San Francisco	JOSÉ P. ALACAN.....	Havana, Cuba
C. M. FORD.....	Denver	WILLIAM B. DAY.....	Chicago
CLEMENT B. LOWE.....	Philadelphia	E. L. PATCH.....	Boston
HENRY KRAEMER.....	Philadelphia	LEWIS C. HOPP.....	Cleveland

ON REVISION OF THE CONSTITUTION AND BY-LAWS.

J. W. ENGLAND, <i>Chairman</i>	Philadelphia	J. H. BEAL.....	Scio
H. M. WHELPLEY.....	St. Louis	G. M. BERINGER.....	Camden
J. C. WALLACE.....	New Castle, Pa.		

ON PATENTS AND TRADE MARKS.

F. E. STEWART, <i>Chairman</i>	Philadelphia	SOLOMON BOEHM.....	St. Louis
S. L. HILTON.....	Washington, D. C.	L. G. BLAKESLEE.....	St. Louis
L. W. GRIFFIN.....	Boston		

INTERNATIONAL COMMITTEE ON PHARMACEUTICAL NOMENCLATURE.

CASWELL A. MAYO, <i>Chairman</i>.....New York	H. M. WHELPLEY.....St. Louis
JOSEPH P. REMINGTON.....Philadelphia	G. M. BERINGER.....Camden
E. O. ENGSTROM.....Pittsfield	

ON DRUG REFORM.

L. E. SAYRE, <i>Chairman</i>.....Lawrence, Kan.	ALBERT SCHNEIDER.....San Francisco
E. V. HOWELL.....Chapel Hill	

ON WEIGHTS AND MEASURES.

GEORGE C. DIEKMAN, <i>Chairman</i> ...New York	C. W. JOHNSON.....Seattle
A. H. CLARK.....Chicago	PHILIP ASHER.....New Orleans
GEORGE A. GORGAS.....Harrisburg	

DELEGATES TO A. M. A. SECTION ON PHARMACOLOGY.

J. P. REMINGTON, <i>Chairman</i>.....Philadelphia	L. F. KEBLER.....Washington, D. C.
H. M. WHELPLEY.....St. Louis	G. M. BERINGER.....Camden
J. H. BEAL.....Scio	OTTO RAUBENHEIMER.....Brooklyn
H. H. RUSBY.....Newark, N. J.	THEO. J. BRADLEY.....Boston
I. V. S. STANISLAUS.....Philadelphia	GEORGE E. NORTON.....Cambridge

DELEGATES TO N. W. D. A.

THOMAS P. COOK, <i>Chairman</i>.....New York	THEO. F. MEYER.....St. Louis
FRED L. CARTER.....Boston, Mass.	HOWARD BREWER.....Worcester, Mass.
J. H. BEAL.....Scio, O.	

DELEGATES TO N. A. R. D.

H. B. GUILFORD, <i>Chairman</i> .	W. BODEMAN.
SIMON N. JONES	W. C. ANDERSON.
	FRANK H. FREERICKS.

ON PHYSIOLOGICAL TESTING.

E. M. HOUGHTON, <i>Chairman</i>	130 Longfellow Ave., Detroit
H. C. WOOD, JR.....	434 S. 44th St., Philadelphia
CHARLES R. ECKLER.....	432 E. St. Clair St., Indianapolis
W. A. PEARSON.....	35 Poplar St., Philadelphia
WILLIAM WORTH HALE.....	1495 Newton St. N. W., Washington, D. C.

COMMITTEE ON EDITING RULES.

(Appointed by the President.)

FRANCIS B. HAYS, <i>Chairman</i>.....New York	HARRY B. MASON.....Detroit
EZRA J. KENNEDY.....New York	HUGO KANTROWITZ.....New York

COMMITTEE ON INTERNATIONAL CONGRESS OF PHARMACY.

(Appointed by the President.)

JOS. P. REMINGTON, <i>Chairman</i> ...Philadelphia	ALBERT SCHNEIDER.....San Francisco
EUGENE G. EBERLE.....Dallas, Tex.	

COMMITTEE ON ORGANIZATION OF LOCAL BRANCHES.

(Appointed by the President.)

THEO. D. WETTERSTROEM, <i>Chmn</i> ...Cincinnati	JOSEPH LENGFELD.....San Francisco
GEO. B. KAUFFMAN.....Columbus, O.	OTTO CLAUS.....St. Louis
CHARLES W. JOHNSON.....Seattle	

COMMITTEE ON DRUG MARKET.

(Appointed by the Chairman of the Scientific Section.)

EDGAR L. PATCH, <i>Chairman</i> .	L. F. KEBLER.
W. L. SCOVILLE.	H. H. RUSBY.

GENERAL MEMBERSHIP COMMITTEE, 1911-1912.

WILLIAM B. DAY, *Chairman*, 74 East 12th St., Chicago.

- Ala.—W. E. BINGHAM, Tuscaloosa.
JAMES C. VANANTWERP, Mobile.
- Ariz.—HARRY BRISLEY, Prescott.
R. P. H. ROZIENE, Phoenix.
- Ark.—W. L. DEWOODY, Pine Bluff.
F. SCHACHLEITER, Hot Springs.
MISS M. A. FEIN, Little Rock.
- Calif.—ALBERT SCHNEIDER, San Francisco.
CHARLES B. WHILDEN, San Francisco.
GEORGE H. P. LICHTHARDT, Sacramento.
THOMAS W. JONES, Los Angeles.
J. G. MUNSON, San Jose.
- Colo.—S. L. BRESLER, Denver.
FRED W. NITARDY, Denver.
E. L. SCHOLTZ, Denver.
- Conn.—CHARLES A. RAPELYE, Hartford.
JOHN B. EBBS, Waterbury.
- D. C.—W. S. RICHARDSON, Washington.
M. I. WILBERT, Washington.
- Del.—H. K. WATSON, Wilmington.
E. A. TRUITT, Middleton.
- Fla.—J. M. DIXON, Jacksonville.
ERNEST BERGER, Tampa.
- Ga.—WILLIAM S. ELKINS, Atlanta.
MAX MORRIS, Macon.
- Ida.—CLARENCE O. BALLOU, Boise.
H. M. SKEELS, Twin Falls.
- Ill.—C. H. AVERY, Chicago.
GEORGE W. SOHRBECK, Moline.
WILHELM BODEMANN, Chicago.
W. B. DAY, Chicago.
- Ind.—FRANK H. CARTER, Indianapolis.
F. S. HERETH, Indianapolis.
W. H. RUDDER, Salem.
F. W. MEISSNER, JR., La Porte.
- Iowa—WILBER J. TEETERS, Iowa City.
G. SCHIERLING, Sioux City.
- Kan.—LUCIUS E. SAYRE, Lawrence.
MATTHIAS NOLL, Atchison.
- Ky.—JOHN W. GAYLE, Frankfort.
C. LEWIS DIEHL, Louisville.
- La.—FABIUS C. GODBOLD, New Orleans.
M. T. BRESLIN, New Orleans.
PHILIP ASHER, New Orleans.
- Me.—ALFRED P. COOK, Portland.
M. L. PORTER, Danforth.
C. H. DAVIS, Bangor.
- Md.—H. A. B. DUNNING, Baltimore.
EVANDER F. KELLY, Baltimore.
H. L. MEREDITH, Hagerstown.
- Mass.—C. HERBERT PACKARD, Boston.
E. H. LAPIERRE, Cambridge.
JAMES F. GUERIN, Worcester.
WILLIAM H. GLOVER, Lawrence.
- Mich.—WILLIAM A. HALL, Detroit.
LEONARD A. SELTZER, Detroit.
J. O. SCHLOTTERBECK, Ann Arbor.
W. C. KIRCHGESSNER, Grand Rapids.
- Minn.—F. J. WULLING, Minneapolis.
ALBERT D. THOMPSON, Minneapolis.
W. A. FROST, St. Paul.
CHARLES T. HELLER, St. Paul.
- Miss.—OSCAR W. BETHEA, Meridian.
A. S. CODY, Osyka.
- Mo.—H. M. WHELPLEY, St. Louis.
OTTO H. CLAUS, St. Louis.
W. MITTELBACH, Booneville.
CHARLES E. ZINN, Kansas City.
J. G. WIRTHMANN, Kansas City.
- Mont.—HOWARD ROCKEFELLER, Butte.
LEE WARREN, Billings.
- Neb.—CHARLES R. SHERMAN, Omaha.
AUTUMN V. PEASE, Fairbury.
- Nev.—JOSEPH M. TABER, Elko.
- N. H.—WILLIAM D. GRACE, Portsmouth.
HERBERT E. RICE, Nashua.
- N. J.—GEORGE M. BERINGER, Camden.
CHARLES HOLZHAUER, Newark.
H. A. JORDAN, Bridgeton.
- N. Y.—GEORGE C. DEIKMAN, New York City.
JOSEPH WEINSTEIN, New York City.
CASWELL A. MAYO, New York City.
W. C. ALPERS, New York City.
OTTO RAUBENHEIMER, Brooklyn.
ALBERT M. ROEHRIG, Buffalo.
WARREN L. BRADT, Albany.
- N. C.—E. V. ZOELLER, Tarboro.
E. V. HOWELL, Chapel Hill.
- N. D.—H. L. HAUSSMEN, Grafton.
W. S. PARKER, Lisbon.
- New Mexico—B. C. RUPPE, Albuquerque.
- Ohio—LEWIS C. HOPP, Cleveland.
J. H. BEAL, Scio.
THEO. D. WETTERSTROEM, Cincinnati.
GEORGE B. KAUFFMAN, Columbus.
- Okla.—FORESS B. LILLIE, Guthrie.
H. D. KNISELEY, Checotah.
- Ore.—JOHN A. LAUE, Portland.
G. C. BLAKELEY, The Dalles.
- Pa.—JOSEPH W. ENGLAND, Philadelphia.
W. L. CLIFFE, Philadelphia.
W. MCINTYRE, Philadelphia.
E. FULLERTON COOK, Philadelphia.
JULIUS A. KOCH, Pittsburgh.
- R. I.—W. O. BLANDING, Providence.
JAMES O'HARE, Providence.
- S. C.—G. W. EVANS, Anderson.
- S. D.—IRWIN A. KEITH, Lake Preston.
E. C. BENT, Dell Rapids.
- Tenn.—JOHN T. MCGILL, Nashville.
WILLIAM R. WHITE, Nashville.
F. W. MAYO, Memphis.
- Tex.—JACOB SCHRODT, Dallas.
ROBERT H. WALKER, Gonzales.
R. H. NEEDHAM, Fort Worth.
- Utah—F. A. DRUEHL, Salt Lake City.
OTTO R. PETERS, Salt Lake City.
- Vt.—E. W. GILMAN, Marshfield.
W. E. TERRILL, Montpelier.
W. H. ZOTTMAN, Burlington.

- Va.—CHARLES B. FLEET, Lynchburg.
T. A. MILLER, Richmond.
- Wash.—C. W. JOHNSON, Seattle.
CORNELIUS OSSEWARD, Seattle.
P. JENSEN, Tacoma.
- W. Va.—JOHN COLEMAN, Wheeling.
GEORGE O. YOUNG, Buckhannon.
- Wis.—EDWARD WILLIAMS, Madison.
EDWARD HEBBARD, La Crosse.
HENRY Z. RUENZEL, Milwaukee.
- Wyo.—ARTHUR NEVILLE, Fort Mackenzie.
- Hawaiian Islands—
SAMUEL LOUIS RUMSEY, Honolulu.
- Province of Manitoba—
H. E. J. BLETCHER, Winnipeg.
- Province of New Brunswick—
M. V. PADDOCK, St. John.
- Province of Nova Scotia—
F. C. STIMSON, Halifax.
- Province of Ontario—
C. F. HEEBNER, Toronto.
- Province of Quebec—
J. E. MORRISON, Montreal.
- Cuba—JOSE GUILLERMO DIAZ, Havana.
JOSE P. ALACAN, Havana.
- Alaska—GUY L. SMITH, Douglas.
- Philippine Islands—
NEWTON C. COMFORT, Manila.
- Porto Rico—FRED C. BAUM, San Juan.

NATIONAL ASSOCIATIONS OF BOARDS OF PHARMACY

OFFICERS FOR 1911-1912.

- R. H. WALKER, *President*....Gonzales, Tex. H. L. HAUSSAMAN, *2d V. Pres.*Grafton, N.D.
D. F. DAVIS, *First Vice President*..Barre, Vt. L. C. LEWIS, *3d Vice Pres.*...Tuskegee, Ala.
A. F. SALA, *Secretary-Treasurer*..Winchester, Ind.

Executive Committee.

- J. B. BOND, SR., *Chmn.*, 1912..Little Rock, Ark. C. E. ZINN, 1914.....Kansas City, Mo.
T. A. MILLER, 1913.....Richmond, Va. R. H. WALKER, *ex-officio*; A. F. SALA, *ex-officio*

Syllabus Committee.

- W. H. RUDDER, seven years.....Salem, Ind. CHARLES GEITNER, four years..St. Louis, Mo.
E. O. ENGSTROM, six years...Pittsfield, Mass. CHAS. T. HELLER, three years, St. Paul, Minn.
S. L. HILTON, five years...Washington, D. C. D. F. JONES, two years.....Watertown, S. D.
C. O. BIGELOW, one year....New York City.

Questions and Methods Committee.

- H. L. HAUSSAMAN, *Chmn.*....Grafton, N. D. C. N. AVERY.....Chicago, Ill.
WM. C. POWELL.....Snow Hill, Md. F. W. BUCKNAM.....Skowhegan, Me.

Legislation Committee.

- J. C. BURTON, *Chairman*.....Stroud, Okla. A. J. FISCHER.....Santa Fe, N. M.
ED. J. RODGERS.....Port Huron, Mich. C. O. BALLOU.....Boise, Idaho
F. W. WARD.....Memphis, Tenn.

Committee to Arrange Reciprocal Interchange with Cuba.

- E. BERGER, *Chairman*.....Tampa, Fla. J. F. DOWDY.....Little Rock, Ark.
H. L. HAUSSAMAN.....Grafton, N. D.

Publication Committee.

- S. L. BRESLER.....Denver, Colo.

AMERICAN CONFERENCE OF PHARMACEUTICAL FACULTIES

President, J. O. SCHLOTTERBECH,
Ann Arbor, Mich.

Vice President, A. H. CLARK....Chicago, Ill.

Sec.-Treas., CHAS. W. JOHNSON, Seattle, Wash.

Executive Committee—

- J. A. KOCH, *Chairman*.....Pittsburgh, Pa.
E. J. EBERLE.....Dallas, Texas
E. H. LA PIERRE.....Boston, Mass.
J. M. GOOD.....St. Louis, Mo.
W. J. TEETERS.....Iowa City, Iowa

Members on National Syllabus Committee.

- C. B. LOWE.....Term ends 1912 J. A. SCHLOTTERBECH.....Term ends 1915
W. C. ANDERSON.....Term ends 1913 H. H. RUSBY.....Term ends 1916
J. A. KOCH.....Term ends 1914 J. H. BEAL.....Term ends 1917
C. W. JOHNSON.....Term ends 1918

BAN ON INDEMNITY INSURANCE.

The insurance commissioner of the State of Missouri has placed a ban upon indemnity insurance for druggists, doctors, dentists and automobilists. It is his contention that such a system of insurance is a danger to the people, as it would tend, if not to encourage carelessness, at least to make many persons less careful in matters in which every precaution should be taken. He says the measure is particularly necessary as affecting automobilists, as owners and drivers are likely to take more chances if they feel that they will be protected from heavy costs by an insurance policy. The order affects many insurance companies in the state which have been doing a large business in indemnity insurance. It is as follows:

Insurance companies are hereby prohibited from writing insurance in the state of Missouri for physicians, surgeons, dentists or druggists indemnifying them against liability for damages resulting from negligence in dispensing or administering drugs and medicines or in the practice of medicine, surgery, dentistry or pharmacy.

Insurance companies are also prohibited from writing insurance in the state of Missouri indemnifying the owners or drivers of automobiles against liability for damage arising from injuries or death occasioned to persons who may be struck by automobiles.

It would seem there is to be no end of restrictive regulation and legislation affecting the druggist, and making his business more hazardous and less profitable. Menaced on every hand by laws and regulations not easily interpreted in all their phases, he is in constant danger of being sued or prosecuted for an unintentional infraction of some regulation in violation of some law. Now the Missouri official would prevent him from protecting himself against financial loss as the result of innocent mistakes or false charges by denying him the right to indemnity insurance. Surely this is the limit. By the same course of reasoning fire insurance is dangerous because it leads to carelessness in the protection of property or tempts to arson; marine insurance is bad because it tempts owners of ships to wreck them at the risk of many lives; life insurance is against public policy because it might tempt to suicide or murder as a means of securing money for the beneficiaries. In a few cases all these kinds of insurance have led to wrongdoing, but on the whole their operation has been helpful to individuals and to the community.

So with indemnity insurance. While it may be abused by a few unprincipled men, its general result is wholesome and salutary, saving many individuals from ruinous financial loss through harassing suits by unprincipled persons.—*Voice of the Retail Druggist*.

"In their hurry to attain some ambition, to gratify the dream of a life, men often throw honor, truth, and generosity to the winds. Politicians dare to stand by and see a city poisoned with foul water until they 'see where they come in' on a water-works appropriation. If it be necessary to poison an army—that, too, is but an incident in the hurry for wealth."—*William George Jordan*.

COMPARE YOUR PRICE LISTS

A CAREFUL STUDY

*Practically
85%
Of
Lilly
Products
Are
Subject
To
Best
Discount
40%
Through
Your
Jobber*

*Study
The
Parts
Of
Other
Lists
Subject
To
"Best"
Dis-
counts*

of our price list will show you that a very large percentage of your pharmaceutical requirements are subject to 40 per cent. discount without contract obligation, through your jobber. Net prices to all retailers on articles in PART II., which is relatively small, are on the same net basis as commonly given by competitors to their preferred customers who are under contract to buy a given quantity direct within a specified time.

IN VIEW OF THESE FACTS

does it seem wise to obligate yourself to buy a large amount of pharmaceuticals direct from the manufacturer within a definite period when such low and liberal terms can be secured at any time through your jobber by specifying Lilly?

COMPARE PRICE LISTS

STUDY your past purchases and see if Lilly specifications through your jobber will not help you to keep better stock, lower your liabilities and give you more cash at the end of the year.

*YOUR JOBBER CARRIES THE
COMPLETE LILLY LINE :: ::*

ELI LILLY & CO.

INDIANAPOLIS
NEW YORK

CHICAGO
ST. LOUIS

KANSAS CITY
NEW ORLEANS



New Nineteenth Edition

The Indispensable

United States Dispensatory

Based on the New U. S. Pharmacopœia. It contains *in the text* all the latest, revisions and additions made necessary by the National Pure Food and Drugs Act.

By H. C. WOOD, M. D., LL. D.

JOSEPH P. REMINGTON, PH. M., F.C.S., F.L.S.

SAMUEL P. SADTLER, PH. D., F.C.S.

DISTINCTIVE FEATURES

A glance at the index shows the enormous number of subjects treated—over 20,000.

Additions and corrections of the latest United States Pharmacopœia and National Formulary are inserted *in the text*.

Metric system and old-form quantities are used in the formulas.

A table of the official preparations into which the drug enters is found at the end of each article. Official substances are separated from those which are unofficial, as the Food and Drugs Act recognizes only those which are official.

More than a thousand references to scientific journals and magazines throughout the text indicate where further information, or the original articles themselves, can be found.

The daily use required of this indispensable book led the publishers to select durable yet thin paper, so as to keep down the weight of the book. The binding, the width of the page, the double column, the style of type, even the quality of the ink, were especially selected in order to adapt this work to quick reference and to the need of the busy druggist in the smallest detail.

Imperial 8vo. Cloth, \$7.00; Sheep, \$8.00; Half Russia, \$9.00.
Patent Index, 50 cents additional.

J. B. LIPPINCOTT COMPANY

PUBLISHERS

PHILADELPHIA

A Message from Merrell.

The Merrell Selling Plan for 1912.

ORIGINAL

In its inception.

LIBERAL

In its practical benefits.

EFFECTIVE

In its far-reaching results.

The Merrell Plan is the New Gospel

Preached to pharmaceutical buyers everywhere, for large and small are equally interested.

The Merrell Plan is the principle of CO-OPERATION in actual practice. It means closer affiliation with the retail druggist—larger sales through ability to control local conditions—and better profits through a more equitable application of the buying power of a dollar.

"It means 10 per cent to me" is one good reason assigned by druggists for the specification of "Merrell" on open orders through the jobber.

If you have our UP-TO-DATE 1912 Prices Current—compare our prices—otherwise we will send you a copy and you will be convinced that

**The Merrell Plan
"Looks Good" and saves you 10 .**

The Wm. S. Merrell Chemical Co.
CINCINNATI.

SAFE FIRE INSURANCE

The several kinds of Fire Insurance
may be classified as

Safe—Reasonably Safe—Unsafe

Every Insurance Company or Concern, whether Safe, Reasonably Safe, or Unsafe, will issue a policy to you. Such policy is a printed piece of paper. It may have value or it may not. Its value depends largely upon what the Company or Concern has to back it up with.

We are the only Capital Stock Druggists' Fire Insurance Company in existence. We have a Surplus as to Policyholders of nearly \$300,000.00. *We are under the supervision of 31 State Insurance Departments.*

We Publish Our Financial Condition

**We Sell the Very Best Fire Insurance at the
Lowest Consistent Price**

WRITE TO

The American Druggists Fire Ins. Co.

1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

The Journal of the American Pharmaceutical Association

Volume I

SEPTEMBER, 1912

No. 9

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

The Sixtieth Annual Convention

THE PRESIDENT'S ADDRESS.

JOHN G. GODDING.

Members of the American Pharmaceutical Association, Honored Guests, Ladies and Gentlemen:

It is a great pleasure to me to call to order the sixtieth annual meeting of this great and honored Association.

It is also a pleasure that we meet at this time, in the beautiful and modern city of Denver. Here we shall dwell for a short time, and may the energy and thought which have inspired the great and rapid progress of this city be in part ours, and may we receive inspiration to take up the work of our calling and profession and carry it on to a greater development for the benefit of the present and the future.

Seventeen years ago we met here in the Queen City of the Rockies. It was a pleasure to everyone present at that time, to receive of the hospitality extended to them; that hospitality was genuine, I am sure, for again we are here and the

proof which is shown by looking at the program, arranged by the good people of Denver for our benefit, is conclusive.

It would be interesting to review and note the influence, progress, and growth this Association has made in Pharmaceutical Education during these seventeen years, and to review as well the previous years of our existence, but that would take too much of your time and is really needless, for Dr. Whelpley gave us a very interesting and able resume of fifty years of work of this Association at the time of his service in this chair.

Today we reach the beginning of another decade, and I feel that it is indeed an honor and privilege which I appreciate at its true value, to preside over this great convention on the occasion of its sixtieth meeting. Sixty years of continued progress from the smallest beginnings to the present magnitude, while ever



JOHN G. GODDING, President, 1911-1912.



W. B. DAY, President, 1912-1913.

Upward and Onward has been the watchword, until here today from the mountain heights of this fair city we, for a moment cast a backward glance to that far eastern city where the first meeting was held. The years have been years of fruitful endeavor and the decade since the semi-centennial has been marked by the accomplishment of much, namely:

The growth of the American Conference of Pharmaceutical Faculties, then two years old, representing twenty-six colleges, today increased to thirty-five colleges. This period also marks the sixtieth anniversary of the organization of this Association by five of these colleges.

The establishment of the National Association Boards of Pharmacy now about to hold its ninth annual meeting.

The Bulletin of the American Pharmaceutical Association, the messenger of the present Journal of the American Pharmaceutical Association.

The organization of eleven active Local Branches, and not the least important, the growth in membership of the Association from 1231 to about 2600.

UNITED STATES PHARMACOPOEIA.

The American Pharmaceutical Association has always taken an active interest in the United States Pharmacopoeia and some of the abstracts given us at our last convention of the work of the committee on its revision, together with the methods noted since, of gleaning practical knowledge for the ninth revision, leads me to say that this revised text-book of governmental authority will undoubtedly rank as first among the Pharmacopoeias of the world, both as an educational and



WILHELM BODEMANN, First Vice-President.

practical standard, and I am glad we are able to state that the work is largely that of the members of the American Pharmaceutical Association.

NATIONAL FORMULARY.

The fourth edition of the National Formulary, written, compiled and edited by a committee of this Association under the chairmanship of C. L. Diehl, is about to be published. This work is one of our text-books and second only in importance to the United States Pharmacopoeia. It is filling its mission with increasing interest to the pharmaceutical and medical professions, as amply shown by the work and attention given to it by both of the above professions the past year.

From the pharmacists' viewpoint the National Formulary, coupled with the propaganda work has become most valuable, in fact, too much cannot be said about its value. From all over the country we know of the great Propaganda movement and its success in a financial way to the pharmacist, and its professional

and ethical help to the physician. For the pharmacist, aside from the financial point of view, it is giving him greater practical experience than ever. It is requiring more attention and study of the professional side of his business and the necessary laboratory work is bringing about a need and desire on the part of proprietors and clerks for greater improvement, indeed, even to investigation and research.

This Association should use every means to engage the co-operation of the Boards of Pharmacy of all states to require every licensed pharmacist to have a copy of the United States Pharmacopoeia and the National Formulary, which requirement is only a requisite in a few of the states.

THE JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

With the advent of 1912 the proposed Journal of a year ago has become a reality, and the Association takes pride in its publication, so ably edited, and in a style so well in keeping with the dignity of our Association and the profession at large.

The editorials, scientific articles, reports, and the recording of transactions in general pertaining to our calling, are of such high character as to make the Journal an organ of great value to the Association, its local branches and to every pharmacist.

It gives to our members clear and comprehensive information. By its intrinsic value it supplies the Association with means for appealing for new members. The pharmacist of today whose business requires both professional and business training should consider it a necessity in his library. I urge every member's indorsement and earnest assistance in extending its influence and circulation.

PHARMACEUTICAL SYLLABUS.

The attention of the Association is called to the Pharmaceutical Syllabus, of which a second edition is in preparation. There has been a great need of co-ordination between the work of the colleges and the boards of pharmacy, and the idea of a syllabus to meet this need originated in New York state, but the work was so important that it soon aroused widespread interest and the National Syllabus Committee, composed of twenty-one members of the Association and of college faculties and examining boards, was organized. The unselfish and devoted work of the members of this committee should be appreciated by all. In the first edition of a book created in such manner there were certain to be various faults of more or less importance. The committee state that they have been glad to receive helpful criticism on the work and hope and expect that in the second edition these faults will be corrected, and that all that is worthy in the first edition will be retained. The Association is largely represented in the work, and should continue to bear its share of the expenses of the committee. Certainly the Syllabus is meeting with approbation in its field of usefulness.

RECEIPT BOOK.

At the present time the Department of Pharmaceutical Formulas has published 100 receipts in the Journal of the American Pharmaceutical Association. Many are in local use. Heretofore, when needed they were not to be found without

much searching and then with varying success as to reliable direction in compounding.

It seems desirable that these formulas should be the forerunner of the "American Pharmaceutical Association Receipt Book." The publishing of such a book would probably add prestige and revenue to this Association.

NATIONAL ASSOCIATION OF RETAIL DRUGGISTS.

The American Pharmaceutical Association was represented at the convention of the National Association of Retail Druggists last September at Niagara Falls by a delegation and the President.

Secretary Beal addressed the convention with his inimitable style and ability.

The cordial relations existing between these two great Associations, so actively engaged in their respective fields, were expressed on every hand.



CHARLES M. FORD,
Second Vice-President and Local Secretary.



EUGENE G. EBERLE,
Chairman of the Council.

United action of both Associations upon matters of vital and mutual interest, such as National Legislation, Educational and Commercial Pharmacy, wield an influence that is not to be accomplished alone and is to be heartily commended.

Delegates were appointed to the Convention held last week at Milwaukee, also to that of the American Medical Association at Atlantic City the past June.

I will not anticipate the report of these delegations by any words of mine as you will be pleased to hear from them a full account of the proceedings.

THE STATE ASSOCIATIONS.

Through the Membership Committee of the American Pharmaceutical Association and its Secretary, Treasurer and President, greetings were extended to each state organization. An appeal for new members was made before their respective

conventions by our representatives, who were cordially received, and our Association favorably brought before large numbers.

This effort to bring our Association before the meetings of our calling should be continued. The establishment has been suggested of a Federation of State Pharmaceutical Associations or a delegate body made up from each of their respective Legislative Committees to cooperate with this Association in like manner to that of the American Conference of Pharmaceutical Faculties and the National Boards of Pharmacy, a federation ready for quick and united action in relation to National Legislation and uniform Food and Drug Laws. I believe such a body would become of value to the Association and the pharmacists throughout the country, and that conditions existing in different states would be brought out and adjusted for the betterment of all. I recommend that this subject be referred to the Council.

MEMBERSHIP.

The subject of Membership has received the attention of many Presidents of this Association and their suggestions adopted with good success, yet the fact remains that many pharmacists are not within our ranks who should be, notwithstanding the untiring work of our able Membership Committee.

As new blood is the life of any organization, I believe we should use some method of publicity to gain an increase in membership, and with this idea in mind would suggest that we start proper and aggressive advertising, possibly the distribution of our JOURNAL, either free or by subscription, among non-members, and other forms of publicity. This to be carried out by the Council and the General Committee on Membership and Reception.

There exists an erroneous idea with many pharmacists that the American Pharmaceutical Association is for the strictly scientific pharmacists, chemists and the colleges of pharmacy. When their attention is called to the work of the different sections and their advantages, they immediately become members. I believe this publicity, together with the great assistance of the propaganda with the National Formulary, the Local Branches and the new JOURNAL will ultimately result in a much larger membership of the Association.

BUREAU OF CHEMISTRY AND DEPARTMENT OF AGRICULTURE OF THE UNITED STATES GOVERNMENT.

By the resignation of Dr. Harvey W. Wiley as chief of the Bureau of Chemistry, Department of Agriculture, the profession of Pharmacy has suffered the loss of an honest and efficient official.

At the time of our last Convention, a year ago, Dr. Wiley was under charges of a serious nature and he was receiving a great deal of adverse criticism. Since that time he has been entirely exonerated, and given an immense amount of praise for the work he has performed. For personal reasons he has since resigned and we hope an equally true and efficient man may fill the position made vacant by him.

It seems to me for the good of the people of this great country that every assistance should be given the President of these United States by men whose pro-

fession brings them in touch with the class of men from whose ranks the kind of man should be selected.

This Association should use every legitimate means in advocating the filling of that position by one thoroughly trained and educated in the profession of chemistry and pharmacy. An appointment of such great importance should be carefully made.

INTERNATIONAL CONGRESS OF PHARMACY.

The eleventh International Congress of Pharmacy at the Hague meets in September, 1913. The Congress will consist of five sections.

1. General Subjects.
2. Galenical Pharmacy.
3. Chemistry.
4. Botany.
5. Bromatology.

The American Pharmaceutical Association is invited to take part in this Congress by sending delegates. Whether it is desirable to be represented is for you to determine. I suggest that this be referred to the Council.

PHARMACISTS IN THE GOVERNMENT SERVICE.

The increased membership from the Public Health and Marine Hospital Service has been larger than any previous year, due to our efforts for co-operation in the work. This Association is so closely allied with the service that this generous response from them should be given our continued support.

CONFERENCE OF FOOD AND DRUG CHEMISTS.

It has been suggested that such an organization be perfected. As there are a number within this Association in several states who are intrusted with the enactment and enforcement of the Pure Food and Drugs Act, such an organization should become affiliated with the American Pharmaceutical Association.

DRUG REFORM.

Your Committee Report on Drug Reform will be received with much interest. The plea for uniformity of Drug Standards and uniform requirements in dispensing has met with a measure of success and is being agitated in some of the Pharmaceutical Associations; its adoption is safeguarding the public, and every reputable physician should indorse it. There is no desire to create a monopoly in drug dispensing for the druggist, but we maintain that drug dispensing requires special training and those who assume the responsibility of the pharmacist as dispenser should comply with the legal requirements of inspection of his stock. He should comply with the laws which regulate the practice of pharmacy in his state.

The situation is fittingly expressed by an honored member of this Association. "It is utterly unfair to the pharmacist to require him to undergo long years of preparation and pass examinations to practice his profession and then for him to meet at every point the unjust competition of unscrupulous physicians who have never taken degrees or passed an examination.

"Also the non-fulfillment of the Pure Food and Drug Laws regarding the inspection of stock.

"The American Pharmaceutical Association has an opportunity to take up this work and I hope it will be kept in sight until all the states take action along the same lines as the Kansas Pharmaceutical Association."

LOCAL BRANCHES.

There has been organized the past year two or more local branches of the American Pharmaceutical Association. These branches may be productive of much good in their different communities by adopting the recommendation of the Secretary of this Association, which is that joint meetings be held of pharmaceutical organizations with the American Pharmaceutical Association



JOSEPH W. ENGLAND,
Secretary of the Council.



C. LEWIS DIEHL,
Reporter on the Progress of Pharmacy.

Branches. This has been tried by some of the branches with marked success. These branches can contribute much to the parent body.

PRE-REQUISITE LAW.

There has been considerable discussion of the pre-requisite law and the Boards of Pharmacy of a few states already demand that an applicant for registration be a graduate of a recognized College of Pharmacy.

Although this is an old subject, I believe it is pertinent to the work of this Association. It is now receiving considerable attention in many states and should in all, to the end that a pre-requisite law be established in all the states, for this is a step in advancing pharmaceutical education. It should receive our continued co-operation and support and especially that of the State Pharmaceutical Associations and State Boards of Pharmacy.

BUSINESS OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

The executive business of this Association is conducted by the Council, whose meetings are open to all, and while it is well for members to be conversant with the work done by the Council, it can be safely stated that all business is carefully, expeditiously and economically handled.

The results of these meetings are printed in our JOURNAL, and should be carefully noted by every delegate before coming to the Convention so we could dispense with the reading of the minutes of the meetings of the Council, thereby saving a great deal of time for the general sessions, which is never sufficient for the important business and matters that should come before the Convention.

Again much time is lost to the incoming President and considerable trouble to the General Secretary caused from the fact that our by-laws do not fully state what committees are appointed by the President or Council. This also applies to the work of the committees. They are appointed by the President and they immediately ascertain what their duties are to be.

The ceremony of installation has long been of insufficient importance as conducted in the past, due to the fact that it has taken place at the end of our meeting when it often happens that there is barely a quorum and some of the officers to be installed, have left for their homes. As a matter of courtesy to the incoming officers and a ceremony which represents their introduction to the Association which has selected them to conduct the affairs of this time honored organization, I believe they should be inducted into office with the dignity and honor becoming an Association of this character. A change of time for installation would be welcomed by them and certainly would be of no loss to the Association. I suggest these subjects be referred to the Committee on Reorganization and Revision of By-Laws.

COMMITTEE ON PHARMACEUTICAL COLLECTION AT WASHINGTON.

After much correspondence with our members within a reasonable distance of the Pharmaceutical Collection at Washington, it has been exceedingly difficult to secure a chairman. I recommend that the Committee on Pharmaceutical Collection be consolidated with the Historical Section.

DECEASED MEMBERS.

Gone but not forgotten! With reverence we pay our tribute of love and respect to the memory of those who during the past year have passed to the larger life. Foremost among these stand the names of the late Enno Sander, who was President in 1871; A. K. Finlay in 1891; Charles E. Dohme in 1868; Henry Biroth, Honorary President the present year; including the valued members, William Muir, George H. Hitchcock, Thomas Doliber and Gustavus Ramsperger. We shall miss their wise council and the inspiration of their strong personality as devoted to Pharmacy. May we ever gratefully cherish their memories and strive to emulate their virtues.

In closing, allow me to say that our Association with its established JOURNAL, greatly increased membership, a growing interest in the United States Pharmacopœia and National Formulary by the Medical Profession and the general in-

crease in the attendance at the Colleges of Pharmacy, all indicate that the pendulum is now swinging back to true Pharmacy. Education and individuality are being more and more recognized by people in general.

This Association has been called a post-graduate course in Pharmacy. It has been the strong hand for the betterment of Pharmacy and its influence as an educational factor will be recognized to a greater extent in the future.

"So it behooves every member of this Association to stand with one purpose, one aim, to raise high the standard of our profession and do all we can and should do in relieving pain and suffering."

At this time I wish to call your attention to the prompt and efficient work of the Council for the continued prosperity of the Association and to heartily thank the officers and committees for the very able manner in which they have performed their duties to the Association and for their great assistance to me.

REPORT OF THE GENERAL SECRETARY AND EDITOR OF THE JOURNAL.

FINANCIAL ACCOUNTS IN CARE OF GENERAL SECRETARY.

Owing to the change in fiscal year to coincide with the calendar year, the financial accounts of the General Secretary are separated into two divisions, the first covering the period from September 1, 1911, the time the books were turned over to him, until the end of the fiscal year, December 31, 1911; the second covering the first half of the new fiscal year, or from January 1 to July 1, 1912, inclusive.

Cash Received From September 1, 1911, to December 31, 1911.

(As per itemized statements submitted herewith.)

National Formulary	\$ 733.31	
Badges and Bars.....	5.20	
Hunter Estate .....	.99	
Proceedings	30.80	
Journal Subscription	3.00	
Total		\$773.67

Cash Received for First Half of Fiscal Year, January 1, 1912, to July 1, 1912, Inclusive.

(As per itemized statement submitted herewith.)

National Formulary	\$1,699.54	
Proceedings	67.51	
Badges and Bars.....	4.37	
Journal Subscriptions and Advertising.....	731.97	
Advertising Collected Since July 1.....	896.23	
		\$3,399.62
		\$4,173.29

RECEIPTS AND EXPENDITURES ON ACCOUNT OF NATIONAL FORMULARY.

As shown by preceding exhibits, the receipts on account of National Formulary from September 1 to December 1, 1911, and from January 1 to July 1, 1912, amount in all to \$2432.85.

Expenditures on account of National Formulary in the same period of time amount to \$1,134.61, of which was expended for manufacture and sale of the book \$554.51, and \$580.10 devoted to the work of revision. During the year there were ordered four printings of 500 copies each.

According to the last report received from the printer, there should be in his possession and on hand at the Secretary's office, sixteen copies in cloth, plain; three copies in cloth, interleaved; six copies in sheep, plain; thirty-two copies sheep, interleaved, and 500 copies in sheets ready for binding.

REVISED EDITION OF THE NATIONAL FORMULARY.

The general Secretary not being a member of the National Formulary Committee, is unable to name any date at which time the Fourth Revision of the volume may be expected, but hopes that the manuscript will be ready for the printer some time near the middle of the year 1913. Allowing a liberal amount of time for the setting of type, preparing of plates, printing and binding, the new volume should be ready for distribution not later than the first of January, 1914.

This estimate is based upon an examination of the published reports of the committee's work.

FUTURE METHOD OF PUBLICATION AND SELLING THE NATIONAL FORMULARY.

Hitherto the Association has assumed the burden both of manufacturing and of marketing the National Formulary. The printing and binding have been done by the Wickersham Printing Co., of Lancaster, Pa., while the marketing of the volume has been in the hands of the General Secretary.

The schedule of prices is as follows:

National Formulary, cloth, plain	\$1.50
National Formulary, cloth, interleaved	1.75
National Formulary, sheep, plain	1.85
National Formulary, sheep, interleaved	2.00

The discounts allowed are as follows:

On orders for 1 to 10 copies.....	10%
On orders for not less than 50 copies.....	20%
On orders for not less than 100 copies.....	25%

Orders for five or more copies are sent directly to the printer, who attends to the work of packing and shipment. Orders for smaller numbers are filled directly from the Secretary's office.

The Secretary believes the time has come when the Council should seriously consider whether this method of sale is to be continued, or whether the Association shall pursue a method similar to that employed in the marketing of the United States Pharmacopoeia. The latter is manufactured by one publishing house and, on order of the Board of Trustees, is turned over, in quantities of several hundred at a time, to another publishing house, which attends to all the details of distribution. The distributing agent is responsible for the books from the time they are turned over until the price of the same has been remitted to the Board of Trustees.

Each copy bears a serially numbered coupon. These coupons are held by the Secretary of the Board and are supplied to the manufacturer from time to time as required, so that the number of books printed and sold can be traced at all times.

The present method of marketing the National Formulary involves a great deal of detail and occupies a considerable portion of the time of the General Secretary, which, I believe, could be used in other ways to the greater advantage of the Association.

It is probably true that under the present method the Association derives a somewhat larger revenue from the book than if it were handled by a general agent, but I doubt whether the small additional profit is sufficient in the long run to compensate the Association for the amount of the General Secretary's time which it requires, and if an additional assistant were employed to look after the work, this saving would be more than entirely wiped out.

After a serious consideration of the matter, and after consultation with some of the members and officers most intimately connected with the business of the Association, I am inclined to recommend that, beginning with the issue of the Revised or Fourth Edition, the work of marketing be placed in the hands of some responsible firm whose business it is to publish and sell books; that the manufacturing of the book be retained in the hands of the association, under the direction of the Council and Publication Committee; that each volume have a serially numbered coupon attached in order that all sales may be accurately traced; and that the retail price of the book be advanced 50 cents on the copy in each binding, this advance to be added to the wholesale price of the book.

If these changes are made, I am fairly confident that a larger number of copies will be sold, and at a better profit than the Association now receives, while the time of the Secretary thus saved could be advantageously employed in other more important features of association work.

INCREASE IN MEMBERSHIP.

Promptly with the taking over of his office the General Secretary made it a part of his care to assist in the work of increasing the membership roll. Old members have been constantly appealed to by personal letters to assist in this work. While the measure of success has been far below his hopes in the beginning, the increase for the year has been fairly gratifying.

About 100 new members have come through the Secretary's office, most of which have been obtained either by direct solicitation of the applicant or through correspondence with the members who secured the applications. It is hoped that this number may be materially increased next year.

The work of the General Membership Committee, under the efficient direction of Chairman Day, has been continued with the same vigor as for several years past, and it is to be hoped that Professor Day can be persuaded to retain the chairmanship of this important committee for the ensuing year, in connection with his office as President of the Association.

The new members secured during the past year are of unusually good quality and it is believed that many of them will in time become important factors in the Association's work.

At the present time the Association has the largest number of dues-paid members, and is carrying upon its roll the smallest number of members in arrears of any time in its history. At the present rate of increase the membership and income will in a few years be somewhere near what they should be to enable the Association to carry on its work in a manner suited to the importance of the position which it occupies in American pharmacy. But this rate of increase should be materially accelerated, and will be if every present member will lay upon his conscience the duty of securing at least one new recruit during each calendar year.

CLEARING THE MEMBERSHIP ROLL.

It is needless for the Secretary to commend the services of the Treasurer for his work in clearing the membership roll of delinquents. His zeal and careful attention to the business of his office has been brought repeatedly to the attention of every member.

His policy of reducing the length of time for which non-paying members shall be continued upon the rolls is heartily concurred in by the General Secretary. As one of the Membership Committee, and as Chairman of the Council for many years, this question was frequently brought to my attention, and after serious consideration I am fully convinced that the Association will in all respects be better off by reducing the period of permissible delinquency to not more than four months after the expiration of the fiscal year for which the member should have paid. Members who will not pay, or who are unable to pay, are of no value to the Association, and of no assistance in the work which it aims to do. Experience shows beyond question that when members are in arrears from two to three years they are more likely to drop out than to continue. If the period of permissible delinquency be reduced to four months, many of those who otherwise would permit their dues to accumulate will pay up. Those who would not pay in any event will be quickly disposed of, while the few who may be temporarily unable to keep up their payments are in a position to withdraw, and can reunite with the society when they are in more favorable circumstances.

LOCAL BRANCHES.

The local branches represent an exceedingly important element in the life of the Association, and one capable of very great extension.

In the opinion of the Secretary, no pains should be spared to encourage the development and activity of the branches and to create new branches in centers of population where they do not now exist.

Where A. Ph. A. branches exist and are active there can be noted a constant and distinct improvement in the professional status of pharmacy and in Association interest. Owing to the fact that in numerous cities there are not sufficient druggists interested in professional work to meet the present requirement for the formation of a local branch, I think it would be well to reduce the number to twelve or sixteen. Where this number of earnest and energetic men can be gathered together it will not be long until they have added to themselves any remaining good material in the district.

The Secretary also presents for your consideration the advisability of granting permits for the formation of "Junior Branches" at colleges of pharmacy, re-

ducing the annual fee for students actually in attendance at college to an amount sufficient to cover the cost of the JOURNAL.

Members of the faculties of several colleges have advised the Secretary that they would be able to organize and successfully conduct such junior branches at their respective institutions, if permission for the same should be granted by the Council.

In the opinion of the Secretary this question is deserving of serious consideration. The Association stands for the same things the colleges stand for, and students should look forward to membership in it as they look forward to graduation.

THE JOURNAL.

Eight issues of the JOURNAL have been printed and distributed to dues-paid members and subscribers, and the ninth monthly issue is now in press.

At the outset it was very difficult to have members to understand that under the rules of the postoffice the JOURNAL could not be sent to dues-paid members unless they had specifically instructed the Treasurer to apply a portion of their dues to the subscription account, since the rules of the postal department require that membership dues and JOURNAL subscriptions be separate. This difficulty has now been largely overcome, and it is believed that all dues-paid members are regularly receiving the JOURNAL. Complaints of non-receipt of the JOURNAL have usually been found to be due either to a failure to sign and return the subscription cards to the Treasurer or to a change in address which has not been promptly forwarded to the Secretary's office. Some failures in mailing and delivering will always occur, though it is the aim of the Editor to reduce such mistakes to the lowest possible number.

The printing and mailing of the JOURNAL is done at Columbus, Ohio, by a very well equipped firm which makes a speciality of magazine publication.

The preparation of copy and the reading of proof have been done by the Editor with the aid of one assistant, who also acts as stenographer and typewriting machine operator.

To the ordinary difficulties of the work, the editor labors under the added disadvantage of residing at a distance of more than 100 miles from the city of publication, necessitating an almost weekly trip, the time consumed in traveling amounting on an average to twelve hours a week. The railroad fare and hotel expenses for these trips must come out of the editor's private purse, since there is no association fund which can be devoted to this purpose. To date, the expenses of these journeys have amounted to something like \$350.

ADVERTISING.

Prior to the publication of the first issue of the JOURNAL the editor prepared a list of rules for the censorship of advertising, which were unanimously adopted by the Publication Committee. These have been printed in each issue of the JOURNAL, and also upon the face of every advertising contract. These rules are of such a nature as to keep the JOURNAL free from announcements not in perfect accord with the ethical professions of the Association, and it may be regarded as a certificate

of good character for a firm or product to be represented in the JOURNAL's advertising pages.

No advertising solicitor has been employed, and consequently all advertisements thus far received have been in response to written requests sent out by the editor. While the result has been gratifying, the patronage is far below what might be legitimately expected when we consider the class of readers to which the JOURNAL is addressed and the number of paid subscribers.

Three thousand (3000) copies have been printed each month, except one, and the last investigation of the mailing list showed that nearly 2600 copies are being mailed each month to paid subscribers, which number does not include exchanges or copies mailed to advertisers. Sample copies have been sent only to persons who have requested them, and to several small lists of names which have been furnished from time to time by the Chairman of the Membership Committee.

It will thus be seen that our subscription list is unusually clean, and free from unpaid circulation which is of little value to advertisers. Those who receive the JOURNAL pay for it, and consequently can be relied upon to scan its pages.

While there is evidence that the advertising patronage of the JOURNAL will continue to grow, the increase will not be as rapid as it should be unless we either employ a regular advertising solicitor, or unless the individual members of the Association cooperate with the Editor in bringing the publication to the attention of advertisers to the trade.

Advertisers naturally like to feel that their expenditures for space are bringing proper returns in the way of publicity, and our members can assure them of this fact in a very practical and effectual manner by giving our advertisers preference in the purchase of goods when prices and quality are equal to those of the non-advertisers, and also by personal expressions of appreciation to those who use the JOURNAL. Occasional reminders to those who are not advertisers that they should be represented in the columns of the JOURNAL will also be of great assistance.

EDITORIAL POLICY.

In general the Editor has adhered closely to the policy enunciated in his initial editorial in the January number, namely, that it is the especial function of the JOURNAL to be the organ of the American Pharmaceutical Association, and that it should not intrude upon the field so ably filled by the independent journals any further than is necessary to discharge this function. Consequently the JOURNAL has not aimed to cover the general news field of pharmacy, and has been in no sense therefore a competitor of the independent journals. Some of the latter have appreciated this policy and have quoted from its pages, with due credit. Others have apparently failed to make such recognition, and although they have quoted liberally from the JOURNAL columns, have done so without other credit than the statement that the paper was read before a Section or Branch of the A. Ph. A.

SIZE AND COST OF THE JOURNAL.

In the Report of the Chairman of the Publication Committee last year it was estimated that 64 pages a month or 768 pages a year would be sufficient to represent all the activities of the Association. Actual experience, however, has shown

that this amount of space is insufficient, and it has required 340 pages of the last four numbers of the Bulletin and 898 pages of the JOURNAL, or 1238 pages altogether, an increase of approximately fifty per cent above the estimate, to print the proceedings of the Boston meeting and the proceedings and papers of the local branches, while much material that properly should have appeared in the JOURNAL has been excluded for the want of space. The estimate also did not take into consideration the cost of illustrations nor of reprints, both of which have added to the increase in size and cost.

The estimate made for the printing and mailing of the JOURNAL was \$195 a month, whereas the actual cost has been in the neighborhood of \$400 per month; and if the JOURNAL is to be continued upon the present scale, we must expect that it will cost the Association for the actual printing and mailing not less than \$4,800 to \$5,000 a year.

Some savings have, however, been made in other directions. The estimated salary of the editor was \$2,000, while the salary finally agreed upon was \$1,800. An estimate of \$1,250 as salary, and 25 per cent commission on advertisements was made for an advertising solicitor. The soliciting of advertising being placed in the hands of the editor has saved this \$1,250, and the percentage on advertising, though it may be fairly doubted whether an efficient solicitor would not have increased the advertising income to an amount more than sufficient to pay his salary and commission.

The original estimate of \$600 for clerical assistance was afterwards increased to \$1,000. Thus far the expenditures have been kept within this allowance, although it has required the Editor to work seven days of every week and from 15 to 18 hours daily in order to do so.

The total expense of printing and mailing the JOURNAL for the first six months, including clerical services and editor's salary is \$2,985.62.

The total receipts for subscriptions from persons not members of the Association and for advertising printed in the first six months amount to \$1,631.10, so that the first half year of the publication represents a net loss of \$1,354.52. If, however, we take into account the subscriptions received from members this deficiency is changed to a credit balance of approximately \$2,500.

GENERAL ASSOCIATION AND PERSONAL NEWS.

Owing to the limitations of space and cost imposed upon the Editor, it has been necessary to restrict the amount of personal and general pharmaceutical news to a minimum during the eight months past. The editor believes that the value of the JOURNAL would be materially added to if more Association news could be printed and especially if each number could include a news letter from the principal centers of the United States and leading drug centers of the world. Such an inclusion would, however, add materially to the size of the JOURNAL, and monthly letters to be of value would necessarily have to be paid for. The Editor therefore does not make any specific recommendation, but refers the subject to the consideration of the Council and Publication Committee.

PUBLICATION COMMITTEE.

The Editor desires to here express his sense of appreciation of the assistance rendered by the Publication Committee. From the beginning the committee gave the Editor a free hand in determining the character, make-up and contents of the JOURNAL, and at the same time has always quickly responded with advice and suggestions when these were called for.

Respectfully submitted,

JAMES H. BEAL,

General Secretary.

SOME INCIDENTS IN THE LIFE OF A TREASURER.*

DR. H. M. WHELPLEY, ST. LOUIS, TREASURER AMERICAN PHARMACEUTICAL ASSOCIATION.

The average person interested in the activities of organizations has a feeling that association dues, like doctors' bills, are really due only when it is convenient to pay them. The by-law which provides for payment in advance is regarded as a matter of form, not to be taken seriously.

When I became treasurer of the A. Ph. A., I found fully three-fourths of the members in arrears for dues. Some owed only for the current year, and others from two to five years. A study of the records showed that many members were in the habit of letting the Association carry them along as delinquents. They would pay annually, but continually remain a few years behind. This custom was not confined to members with little interest in the Association, but was a habit with some who frequently attended the meetings, served on important committees, and even accepted offices of honor and trust.

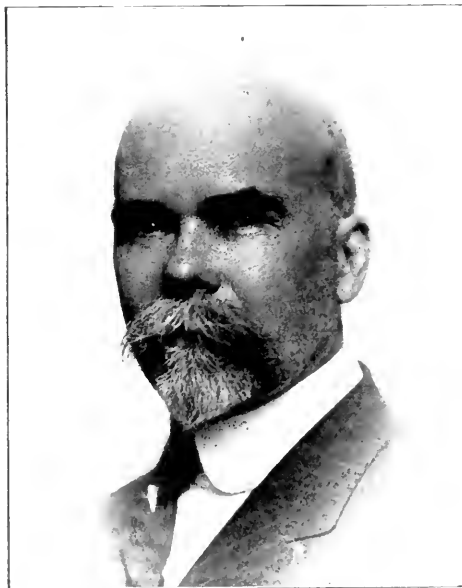
I have always held that association dues constitute an obligation which should be met as promptly as bills at the wholesale houses. I believe the treasurer should push collections by monthly statements or communications, as do the credit-men in jobbing houses. I realized that the membership would not stand the shock of a sudden adoption of such radical methods, so when I took up the work in 1908, I was careful to feel my way and gradually educate the Association up to what seems to me to be a safe and sane custom of paying dues as provided for in the by-laws. Many told me that it could not be done. Others supported my position, and leading members all over the country have cooperated with the treasurer in bringing local members up to date. One member of national as well as local influence in pharmaceutical affairs wished me success in my work, but said he could not approach local delinquents, because, as he explained, "Persons who do not pay their debts are touchy about it when an effort is made to collect."

During the past year I have been more persistent than before, and am pleased to report that, out of more than 2500 members, less than one-fifth owe the Association dues. What is more, this small number is confined to members who are paid up to July 1, 1912, and have been delinquent for only six weeks.

*Submitted in connection with the Treasurer's Report.

This radical change in methods has placed in the treasury between \$5000 and \$10,000 that would otherwise be outstanding. The sum can only be estimated, as many who have paid up would have been eventually dropped for non-payment if permitted to let the account run four or five years.

The change in methods of collecting and the vigorous efforts to cure delinquents have produced constitutional disturbances in some members, and occasionally prove fatal. One member paid up and resigned, explaining that my demands were too exacting. Another said that pharmacists could not afford the swift financial pace of the Association. Some became indignant and others grieved. One man wrote that he had been a member for a quarter of a century, and was always three or four years behind, and did not propose to pay \$25 back dues "just to please a new treasurer." One woman curtly wrote that my fourteenth letter, asking for \$10, was not courteous to her sex. I should explain here that some who owed a dozen or more letters would respond with ten or fifteen dollars



HENRY M. WHELPLEY, Treasurer.

to a subsequent communication. I felt my way carefully, and made certain that the postage and stationery for so many letters was fully justified by the returns.

I will give a few extracts from the several hundred comments made on my work:

ADMONISHES THE TREASURER.

"I enclose ten dollars. If you will see to it that my name is spelled correctly, I will not put you to the trouble of writing ten letters again."

WANTS ASSURANCE IN WRITING.

"If I can be assured that you will put me down as 'resigned', and then not trouble me again with eleven letters, I will send you five dollars and resign. But I first want the assurance in writing."

DIPLOMATIC RELATIONS SEVERED.

In answer to my ninth letter, a member paid \$5.00 and resigned. I sent him a receipt, and a letter expressing the hope that he would soon be in a position to return to the A. Ph. A. This was returned, and the envelope stamped with the word "*Refused.*"

NO LOVE FOR ONE OF THE OFFICERS.

"I have your sixth notice. I will not pay my dues, because I do not like one of the officers, who lives in my city."

JOINED ONLY FOR ONE YEAR.

"Your eighth letter asks for an explanation. I did not order you to continue my membership after the first year. I hope this fully explains."

NOT A MEMBER.

"I never joined the A. Ph. A., so I do not feel like paying a bill of fifteen dollars."

WAS AWAY FROM HOME.

"I have been around the world. I find your fourteenth bill, and suppose the previous thirteen are following my line of travel and will all reach me in due course of time."

CANNOT MEET EXPENSE.

"I am now a married man, and cannot meet the expense of dues, so stop your letters and save the postage."

NO LONGER A PHARMACIST.

"I am now in the hardware business. I have no use for so many letters from you."

READY TO BE DROPPED.

"Yes, drop me. Barkis is willin'."

NO BANK ACCOUNT.

"So you will draw on me for fifteen dollars. Hope you will get it. I cannot get any money out of the bank, and have not seen so much as fifteen dollars for many moons."

PAID WITH STAGE MONEY.

A member paid his 1910 dues by check, and a few weeks after sent me the cancelled check to pay for 1911. He said he would pay for 1912 soon. Another sent a cancelled check which had paid N. A. R. D. dues, to convince me that he did not owe A. Ph. A. dues.

LOOKING FOR A. PH. A. DIVIDENDS.

1. "From my point of view, I cannot see wherein I can derive any benefit from being an A. Ph. A. member."

2. "I have your twelve letters. That is sufficient. Do not send me any more. I do not see anything in the A. Ph. A. for me."

TOOK FRENCH LEAVE.

1. "I quit the A. Ph. A. long ago. Why do you keep after me?"

2. "I do not consider myself a member."

3. "I have never done business with your concern."

4. "I disconnected myself over two years ago. That is why I do not answer."

THOUGHT THE TREASURER WOULD TIRE OUT.

"As I received each notice, I thought it surely would be the last one you would bother me with. Why do you not stop when I do not pay?"

SAVED BY A FELLOW MEMBER.

"At a lodge meeting a fellow member waxed warm about the A. Ph. A., when he found I am about to be dropped. I enclose \$15, and will be a good boy from now on."

PROMISES REFORMATION.

"Do not blacklist me. I enclose twenty dollars. See how prompt I will be hereafter."

"Will the enclosed twenty-five dollars cause you to forget the past? If so, I will take care of the future."

"Ye Gods! Can that be true? If so, I must be dilatory in my business methods. I enclose ten dollars. No more tenth notice for me."

"I enclose \$10.28. The twenty-eight cents covers postage on your fourteen notices, and will remind me to be on time in 1912."

PAYS FAR IN ADVANCE.

Many delinquents have paid for one or more years ahead, in order to atone for the past. One said, "The A. Ph. A. carried me for three years. Now it is only fair for me to reciprocate."

IN HUMOROUS VEIN.

"First of all credit me with the enclosed ten dollars. Now hear about the judge who discharged a prisoner arrested for a plain drunk. The culprit had a long string of wienerwurst. He said, 'Vell, you vas a good chudge. I gif you de wiener.' Dr. Whelpley, you are a good treasurer—I gif you de wiener."

BOX AND CARTAGE PAID BY THE DELINQUENT.

1. "I enclose my dues and a few stamps, to replace those used in chasing me."
2. "Can you guess what the extra twenty cents is for? If not, find out that ten notices cost ten twos."

3. "Hope the twenty-two cents additional will put you in a good humor, and you will cease addressing me as 'Miss'. I am not a member of the feminine sex, even though my name so indicates."

4. "The \$20.40 covers dues and postage on dues. You are onto your job, and deserve a reward."

5. "I send an additional twelve cents for postage. That is more than my slow-pay customers do. But the world is full of trouble, and I suppose that you and I must take our share along with the rest of mankind."

STILL LOVES THE A. PH. A.

"I have all of your letters, both the coaxing and the threatening ones. You do not frighten me. I send the money because I am now ready to do so. I still love the A. Ph. A."

ABJECT APOLOGY.

1. "Will this ten and my abject apology place me in good standing?"
2. "No excuse can atone for my negligence."
3. "Please forget that I was so unmindful of my duty."

APPROVES OF THE NEW METHODS.

1. I congratulate you on the successful methods you follow as a treasurer."
2. "Your perseverance, patience and pluck must bring results."
3. "I enclose twenty dollars for four years. These are past due, and one is in advance. Treasurer Whelpley, you are some collector."
4. "I am now up to date, and I know you will never permit me to get behind again."
5. "Dr. Whelpley, your system is wonderful, and it has been worth the enclosed ten dollars to read your fourteen letters; but I am afraid of what you might say in the next one, so I hasten to remit."

REPORT OF THE TREASURER OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

July 1, 1911, to January 1, 1912.

Receipts.

Cash on hand July 1, 1911.....		\$5701 08
Received from annual dues, 1908.....	\$5 00	
Received from annual dues, 1909.....	295 00	
Received from annual dues, 1910.....	605 00	
Received from annual dues, 1911.....	4585 00	
Received from annual dues, 1912.....	625 00	
Received from annual dues, 1913.....	10 00	
	<hr/>	\$6125 00
Received from sale of 4 Certificates, @ \$5.00.....	\$20 00	
Received from sale of 3 Certificates, @ \$3.00.....	9 00	
	<hr/>	29 00
National Formulary	1632 46	
Badges and Bars	69 40	
Bulletin	1 25	
Proceedings	71 51	
Interest on Bonds	\$200 00	
Interest on International Bank	118 00	
	<hr/>	318 00
Bank Exchange	1 10	
Reimbursement on Overpayment	44 92	
Journal	3 00	
	<hr/>	8295 64
Hallberg Memorial Fund	\$1418 53	
Centennial Fund	15 00	
Life Membership Fund	270 00	
Procter Monument Fund	5 95	
Ebert Legacy Fund	146 32	
	<hr/>	1855 80
Total		\$15,852 52

Disbursements.

August 1, Check 1837, Louis C. Hesse, printing and stationery.....		\$17 50
August 1, Check 1838, Automatic Addressing Co., Bulletin.....		5 93
August 1, Check 1839, E. F. Greathead, printing and stationery.....		11 90
August 1, Check 1840, H. M. Whelpley, printing and stationery.....		10 92
August 1, Check 1841, Wm. B. Day, Committee on Membership.....		13 00
August 1, Check 1842, Regan Printing House, Bulletin.....		135 96
August 1, Check 1843, J. W. England:		
Bulletin	\$2 00	
Printing and stationery.....	9 39	
Miscellaneous expenses	5 20	
	<hr/>	16 59
September 1, Check 1844, A. H. Fetting, badges and bars.....		80 50
September 1, Check 1845, Wickersham Printing Co.:		
Proceedings	\$1337 81	
National Formulary	45	
Miscellaneous expenses	8 65	
	<hr/>	1,346 91

September 1, Check 1846, Regan Printing House, Bulletin.....	20 25
September 1, Check 1847, Automatic Addressing Co., Bulletin.....	4 30
September 1, Check 1848, E. F. Groathead, printing and stationery.....	15 85
September 1, Check 1849, Wm. B. Day, Committee on Membership.....	11 00
September 1, Check 1850, Louis C. Hesse, printing and stationery.....	6 50
September 1, Check 1851, John Mors Co., Committee on Membership.....	5 69
September 1, Check 1852, M. I. Wilbert, National Formulary.....	32 60
September 1, Check 1853, Regan Printing House, Bulletin.....	124 28
September 1, Check 1854, Wm. B. Day, Bulletin.....	7 13
September 5, Check 1855, Chas. W. Johnson, Section on Education and Legislation	3 80
September 5, Check 1856, Geo. M. Beringer, Committee on Unofficial Standards..	73 95
September 5, Check 1857, Dr. S. Solis Cohen, miscellaneous expenses.....	26 50
September 5, Check 1858, Regan Printing House, Bulletin.....	1 25
September 5, Check 1859, Wm. B. Day, Bulletin.....	10 71
September 5, Check 1860, The H. D. Ahrend Co., miscellaneous expenses.....	10 00
September 5, Check 1861, W. J. Teeters, Section on Education and Legislation...	3 94
September 5, Check 1862, P. Henry Utech, Section on Practical Pharmacy and Dispensing	12 15
September 5, Check 1863, J. W. England, miscellaneous expenses.....	24 12
October 5, Check 1864, Clyde M. Snow, National Formulary Conference.....	55 40
October 5, Check 1865, H. V. Army, National Formulary Conference.....	48 80
October 5, Check 1866, C. Lewis Diehl, National Formulary Conference.....	70 70
October 5, Check 1867, Otto Raubenheimer, National Formulary Conference....	24 00
October 5, Check 1868, E. Fullerton Cook:	
National Formulary Conference.....	\$29 20
National Formulary Revision.....	1 73
	30 93
October 5, Check 1869, Geo. M. Beringer, National Formulary Conference.....	31 98
October 5, Check 1870, C. Lewis Diehl, National Formulary Revision.....	25 54
October 5, Check 1871, J. W. England, Bulletin.....	33 33
October 5, Check 1872, H. V. Army, National Formulary Revision.....	2 00
October 5, Check 1873, Regan Printing House, Bulletin.....	132 98
October 5, Check 1874, E. F. Groathead, Printing and Stationery.....	20 80
October 5, Check 1875, Garrett-Bachanan Co., National Formulary Revision....	10 00
October 5, Check 1876, Leonard Seltzer, National Formulary Conference.....	50 60
October 5, Check 1877, Geo. M. Beringer, National Formulary Revision.....	21 48
October 7, Check 1878, The St. Louis Paper Can and Tube Co., printing and stationery	3 00
October 7, Check 1879, Chas. Caspari, Jr., miscellaneous expenses.....	75 56
October 7, Check 1880, Henry L. Taylor, Treas. National Syllabus Committee...	25 00
October 7, Check 1881, J. W. England, miscellaneous expenses.....	24 12
October 7, Check 1882, Otto Raubenheimer, National Formulary Revision.....	56 24
October 7, Check 1883, Wm. B. Day, miscellaneous expenses.....	9 33
October 7, Check 1884, A. H. Clark, Section on Scientific Papers.....	7 20
October 10, Check 1885, E. Fullerton Cook, National Formulary Revision.....	2 31
October 10, Check 1886, Automatic Addressing Co., Bulletin.....	4 62
October 10, Check 1887, Regan Printing House, Bulletin.....	102 84
October 10, Check 1888, James Arnold, National Formulary General.....	4 50
October 10, Check 1889, Wickersham Printing Co., proceedings.....	66 83
October 10, Check 1890, Wickersham Printing Co., National Formulary General..	114 54
October 10, Check 1891, Chas. Caspari, Jr., salaries.....	200 00
October 10, Check 1892, Chas. Caspari, Jr., traveling expenses.....	59 10
October 10, Check 1893, H. A. B. Dunning:	
National Formulary Conference	\$45 80
National Formulary Revision	5 00
	50 80
October 10, Check 1894, American Bonding Co., Treasurer's bond, premium on..	37 50
October 10, Check 1895, J. H. Beal:	
Traveling expenses.....	\$28 00
Clerical services.....	40 00
Miscellaneous expenses.....	20 62
	88 62
October 13, Check 1896, E. F. Groathead, printing and stationery.....	20 80
October 13, Check 1897, H. M. Whelpley, printing and stationery.....	70 43
October 17, Check 1898, Security Storage and Trust Co., miscellaneous expenses.	17 00
October 17, Check 1899, Louis C. Hesse, printing and stationery.....	14 00
October 21, Check 1900, W. T. Robinson, Committee on Membership.....	16 00
October 21, Check 1901, Automatic Addressing Co., Bulletin.....	2 76

October 23, Check 1902, Wm. B. Day:			
	Committee on Membership.....	\$6 00	
	Bulletin	6 85	
			12 85
October 23, Check 1903, J. H. Beal, miscellaneous expenses.....			78 89
November 1, Check 1904, J. H. Henderson, insurance.....			30 00
November 1, Check 1905, John Mors Co., Committee on Membership.....			2 50
November 1, Check 1906, Regan Printing House, Bulletin.....			217 03
November 9, Check 1907, J. H. Beal, miscellaneous expenses.....			62 92
November 15, Check 1908, Wm. B. Day, Committee on Membership.....			11 00
November 18, Check 1909, E. F. Greadhead, printing and stationery.....			11 90
November 18, Check 1910, Wm. B. Day, Bulletin.....			14 38
November 20, Check 1911, Weis Manufacturing Co., supplies.....			6 53
November 20, Check 1912, McLean & Boone, stenographers.....			200 00
November 20, Check 1913, Wickersham Printing Co., proceedings.....			58 09
November 20, Check 1914, Automatic Addressing Co., Bulletin.....			3 26
November 20, Check 1915, Title Guaranty Trust Co., miscellaneous expense.....			5 00
November 20, Check 1916, Dewey Printery:			
	Printing and stationery.....	\$57 05	
	Committee on Unofficial Standards.....	19 25	
	Section on Scientific Papers.....	5 25	
	Section on Education and Legislation.....	5 25	
	Section on Commercial Interest.....	5 25	
	Section on Practical Pharmacy.....	5 25	
			97 30
November 20, Check 1917, J. H. Beal:			
	Clerical	\$57 00	
	Supplies	31 30	
	National Formulary General.....	3 61	
	Bulletin	70	
	Miscellaneous expenses	19 42	
			112 03
December 1, Check 1909a, Louis C. Hesse, printing and stationery.....			33 25
December 1, Check 1910a, Regan Printing House, Bulletin.....			208 72
December 1, Check 1911a, A. H. Fetting, badges and bars.....			1 40
December 7, Check 1912a, Regan Printing House, Bulletin.....			11 00
December 7, Check 1913a, Louis C. Hesse, printing and stationery.....			8 50
December 7, Check 1914a, Geo. M. Beriner, Committee on Unofficial Standards.....			66 35
December 7, Check 1915a, Wm. B. Day, Bulletin.....			16 06
December 28, Check 1916a, J. W. England, miscellaneous expenses.....			21 40
December 28, Check 1917a, The Automatic Addressing Co., Bulletin.....			3 01
December 28, Check 1918, Regan Printing House, Bulletin.....			213 41
December 28, Check 1919, Wickersham Printing Co.:			
	National Formulary General.....	\$47 70	
	Proceedings	78 80	
			126 50
December 28, Check 1920, Geo. M. Beringer, National Formulary Revision....			28 82
December 28, Check 1921, L. D. Havenhill, Committee on Unofficial Standards..			5 62
December 28, Check 1922, H. R. Proper, miscellaneous expenses.....			17 00
December 28, Check 1923, J. W. England:			
	Salaries	\$150 00	
	Miscellaneous expenses.....	1 88	
			151 88
December 28, Check 1924, Wm. B. Day, Committee on Membership.....			23 05
December 28, Check 1925, J. H. Beal:			
	Miscellaneous expenses.....	\$18 18	
	Clerical	63 00	
	Supplies	12 50	
	Printing and stationery.....	1 50	
	Proceedings	57 04	
	National Formulary General.....	5 63	
	Bulletin	1 19	
			159 04
December 30, Check 1926, Irving Pitt Manufacturing Co., Committee on Unoffi- cial Standards			53 21
December 30, Check 1927, Louis C. Hesse, printing and stationery.....			38 00
December 30, Check 1928, Wm. R. White, Committee on Membership.....			12 50

December 30, Check 1929, H. M. Whelpley:

Salaries	\$500 00	
Traveling expenses.....	89 50	
Printing and Stationery.....	83 92	
Miscellaneous expenses	45 16	
		<u>718 58</u>
		\$6,505 85

Payment Out of Hallberg Memorial Fund.

October 13, Check 2492, F. W. Meissner, Western Casket and Undertaking Co.	\$264 10	
October 13, Check 2493, Joseph Reter, painter and decorator.....	36 50	
October 13, Check 2494, Wermer Bros., storage.....	19 50	
October 13, Check 2495, Schieddwohl & Peterson, meat and groceries..	62 13	
October 13, Check 2496, Dr. J. G. Reid, D. D. S., dental work for Mrs. Hallberg	41 00	
October 13, Check 2497, Dr. H. C. Baker, D. D. S., dental work for Mr. Carl Hallberg.....	16 00	
October 13, Check 2498, American Bond and Mortgage Co., mortgage and interest on mortgage.....	596 25	
		<u>\$1,035 48</u>

Cash Received by the Treasurer and Disbursed Without Voucher Checks.

Centennial Fund	\$15 00	
Ebert Legacy Fund.....	146 32	
Life Membership Fund.....	270 00	
Procter Monument Fund.....	5 95	
Hallberg Memorial Fund.....	383 05	
		<u>\$820 32</u>

Total amount of disbursements..... \$8,361 65

Summary of Disbursements.

Salaries	\$ 850 00	
Proceedings	1,598 57	
Printing and stationery.....	435 21	
Miscellaneous expenses.....	490 95	
Stenographers	200 00	
Committee on Membership.....	100 74	
Insurance	30 00	
Section on Scientific Papers	12 45	
Section on Education and Legislation.....	12 99	
Section on Commercial Interest	5 25	
Section on Practical Pharmacy	17 40	
National Formulary Revision	153 12	
National Formulary General	209 03	
National Formulary Conference	356 48	
National Syllabus Committee	25 00	
Committee on Unofficial Standards.....	218 38	
Badges and bars.....	81 90	
Traveling expenses.....	176 60	
A. Ph. A. Bulletin.....	1,283 95	
Clerical service for General Secretary's office.....	160 00	
Supplies for General Secretary's office.....	50 23	
Premium on Treasurer's bond.....	37 50	
		<u>\$6,505 85</u>

Payment out of Hallberg Memorial Fund.....		1,035 48
Hallberg Memorial Fund.....	\$383 05	
Centennial Fund	15 00	
Life Membership Fund.....	270 00	
Procter Monument Fund.....	5 95	
Ebert Legacy Fund.....	146 32	
		<u>\$20 32</u>

Total amount of Disbursements..... \$8,361 65

Cash on hand Jan. 1, 1912..... 7,490 57

Total \$15,852 52

A. Ph. A. Appropriations and Disbursements, January 1, 1912.

	Appropriations.	Expenditure.
Salaries	\$3,250 00	\$ 850 00
Proceedings	4,000 00	1,593 57
Printing and stationery.....	500 00	435 21
Miscellaneous expenses.....	526 50	490 95
Stenographers	250 00	200 00
Badges and bars.....	75 00	81 90
Journals for reporters.....	35 00	
Committee on Membership.....	150 00	100 74
Traveling expenses.....	200 00	176 60
Premium on Treasurer's bond.....	37 50	37 50
Insurance	50 00	30 00
Certificates	50 00	
Section on Scientific Papers	25 00	12 45
Section on Education and Legislation.....	25 00	12 99
Section on Commercial Interests.....	25 00	5 25
Section on Practical Pharmacy.....	25 00	17 40
Section on Historical Pharmacy.....	50 00	
A. Ph. A. Bulletin.....	6,000 00	1,283 95
National Formulary General	1,000 00	209 03
National Formulary Revision	852 92	153 12
National Formulary Conference	700 00	356 48
Committee on Unofficial Standards.....	300 00	218 38
Supplies for General Secretary's office.....	250 00	50 33
Clerical service, General Secretary's office.....	750 00	160 00
Reporter Progress of Pharmacy.....	450 00	
National Syllabus Committee.....	25 00	25 00
Appropriation	\$19,601 92	\$6,505 85
Expenditure	6,505 85	
Unexpended balance	\$13,096 07	

The Permanent Funds, Jan. 1, 1912.

	1911.	1912.
Life Membership Fund.....	\$17,964 68	\$18,528 46
Endowment Fund	5,269 46	5,374 57
Elbert Legacy Fund.....	2,923 47	3,069 79
Centennial Fund	2,501 20	2,546 22
Ebert Prize Fund.....	964 56	983 84
Total	\$29,623 37	\$30,502 88
Net increase during fiscal year.....		879 51

The Association Assets, January 1, 1912.

Cash in bank.....	\$ 7,490 87	
Bonds	10,000 00	
Available Assets.....	\$17,490 87	
Permanent funds	30,502 88	
Total Association assets.....		\$47,993 75
Hallberg Memorial Fund (held in trust).....	\$3,262 27	
Procter Monument Fund (held in trust).....	4,484 86	
College Prize Fund (held in trust).....	31 62	
Grand total		\$55,772 50

DETAILED STATEMENT OF THE SEVERAL FUNDS.

Life Membership Fund (Established in 1870.)

Balance from old account, viz:	
Massachusetts state bonds.....	\$13,000 00
Boston Penny Savings Bank, July 1, 1911.....	4,964 68
Interest on Massachusetts state bond.....	\$195 00
Interest on deposit in Boston Penny Savings Bank.....	98 78
Life Membership Fee, S. W. Williams.....	25 00
Life Membership Fee, J. A. Koch.....	25 00
Life Membership Fee, H. K. Watson.....	25 00
Deposited in Boston Penny Savings Bank (July 1, 1911, to Jan. 1, 1912).....	368 78
Total Jan. 1, 1912.....	\$18,333 46

Ebert Prize Fund (Established in 1873.)

Balance from old account.....	\$964 56
Interest on deposits in Boston Penny Savings Bank.....	19 28
Total on hand Jan. 1, 1912.....	\$983 84

Centennial Fund (Established in 1877.)

Balance from old account, viz:	
Massachusetts 3% registered bond.....	\$1,000 00
Boston Penny Savings Bank, July 1, 1911.....	1,501 20
Interest on bond.....	\$15 00
Interest on Boston Penny Savings Bank.....	30 02
Deposited in Boston Penny Savings Bank (July 1, 1911, to Jan. 1, 1912).....	45 02
Total Jan. 1, 1912.....	\$2,546 22

Procter Monument Fund (Established in 1904.)

Held in Trust.

Balance from old account, viz:	
Placed on time deposit, International Bank @ 4%.....	\$4,050 71
Deposited in International Bank, July 1, 1911.....	428 20
Interest on deposit, International Bank, to Jan. 1, 1912.....	5 95
Total on hand Jan. 1, 1912.....	\$4,484 86

College Prize Fund (Established in 1905.)

Held in Trust.

Balance from old account, July 1, 1911.....	\$31 00
Interest on Boston Penny Savings Bank.....	62
Total Jan. 1, 1911.....	\$31 62

Endowment Fund (Established in 1906.)

Balance from old account.....	\$5,269 46
Interest on deposit in Boston Penny Savings Bank.....	105 11
Total Jan. 1, 1912.....	\$5,374 57

Hallberg Memorial Fund (Established in 1911.)

Held in Trust.

Balance from old account, viz.....	\$3,914 70
Contributions	\$323 10
Interest on deposit International Bank.....	59 95
Deposited in International Bank (July 1, 1911, to Jan. 1, 1912).....	383 05
Expenditure	1,035 48
Total Jan. 1, 1912.....	\$3,262 27

The above report is dated January 1, 1912. It may be of interest to state that on August 15, 1912, the books showed the following increase of Association assets since July 1, 1911:

Cash in bank	\$5349.45
Permanent funds	1448.48
Total	<u>\$6797.93</u>

The Hallberg Memorial Fund on August 15, 1912 stood as follows:

Contributions	\$4486.49
Interest	116.70
	<u>\$4603.19</u>
Expense of collecting	\$ 10.00
Paid on Hallberg Home.....	4530.28
	<u>\$4540.28</u>
	\$ 62.91

Respectfully submitted,

H. M. WHELPLEY, Treasurer.

REPORT OF INVESTED FUNDS OF THE ASSOCIATION.

St. Louis, Mo., July 31, 1912.

To the Officers and Members of the American Pharmaceutical Association:

We, the undersigned, have, in accordance with Rule 8 of General Rules of Finance, examined the securities contained in the Association Box at the Title Guaranty Trust Co., St. Louis, and found the following:

EBERT LEGACY FUND.

St. Louis Bond No. 766.....\$ 2,000.00.

A. PH. A. GENERAL FUND BONDS.

5 St. Louis City Reg. 4 per cent Bonds, Nos. 705, 706, 707, 708, 709.....\$ 5,000.00

1 St. Louis City Reg. 4 per cent Bond, No. 717.....5,000.00

Total\$10,000.00

A. PH. A. CENTENNIAL FUND BOND.

1 Mass. State Reg. 3 per cent, No. 1705.....\$ 1,000.00

A. PH. A. LIFE MEMBERSHIP FUND BONDS.

1 Mass. State Reg. 3 per cent, No. 1701.....\$10,000.00

3 Mass. State Reg. 3 per cent, Nos. 1702, 1703, 1704.....3,000.00

Total\$13,000.00

A. PH. A. PROCTER MONUMENT FUND.

Certificate of Deposit, July 1, 1912 (No. 59517), International Bank of St. Louis....\$ 4,362.63

SOLOMON BOEHM, Member Auditing Committee.

H. M. WHELPLEY, Treasurer.

Subscribed and sworn to before me this thirty-first day of July, 1912.

(Seal.)

STANLEY B. SIMPSON,

Notary Public, City of St. Louis, Mo.

My term expires June 13, 1913.

REPORT OF THE AUDITING COMMITTEE.

To the Officers and Members of the American Pharmaceutical Association:

We have examined the books of Henry M. Whelpley and James H. Beal, respectively Treasurer and General Secretary of the American Pharmaceutical Association for the fiscal year 1911 and compared the records with the vouchers and found them correct. We have found a proper accounting for all of the funds of the association. The cash balance on January 1, 1912, corresponds with the books of the International Bank of St. Louis and the registered bonds and certificate of deposit in the hands of the treasurer.

SOLOMON BOEHM,
OTTO F. CLAUS, Chairman,
FRANCIS HEMM,
Auditing Committee.

St. Louis, Mo., July 31, 1912.

REPORT OF THE GENERAL MEMBERSHIP COMMITTEE.

To the President and Members of the American Pharmaceutical Association:

A feature of the membership campaign during the past year was the accession of 108 members of the Army Hospital Corps, about one-half of whom were from the Philippines—thus bringing the total number of military members to nearly two hundred. This very satisfactory showing by the Army pharmacists is an indication of their interest in the Association and their appreciation of the efforts which the Association has made to improve their condition both as to rank and pay. It is greatly to be hoped that the Committee on Status of Pharmacists in the Government Service will have a favorable report to make in this regard. Many of our committeemen wrote to their senators and representatives in behalf of the Army Hospital Corps and copies of the Journal of the American Medical Association containing an editorial in support of the movement were distributed to members of the Military Committee in the House and Senate and members of the General Staff of the Army as well as to the President and the Secretary of War.

The usual efforts to secure new members were made. Lists of prospective members were supplied by members of the Committee to the Chairman and form letters were drafted and sent out from time to time as seemed necessary. Efforts were also made to secure members at the annual conventions of the state associations and with the efficient aid of President Godding and Secretary Beal these efforts were fairly successful.

The growth of the Association has been along the usual lines geographically. The more populous states especially Illinois, Missouri, Pennsylvania, New York and Ohio have contributed about twenty members each. Colorado leads with twentytwo new members added during the year up to the time this report was prepared. Washington is especially deserving of mention largely through the efforts of Professor Johnson and has added seventeen new members, Cuba two and Panama two. A summary of the members arranged by states is attached. The total number of new members for the year is 393. It is expected that by the

close of this meeting the previous record of 407 will be exceeded. According to information received from the Treasurer the membership in August first stood as follows:

Regular Members	2401
Life Members	110
Life Members, Old Style	20
Honorary Members	6
Total	2537

The expenses of the Membership Campaign were as follows:

Eight sets of form letters	\$ 27.73
Postage	64.05
Stenographer—10 months	50.00
Stationery	27.25
Extra Copies A. M. A. Journal	5.70
Incidentals Kansas Ph. A. Meeting	2.10
	<hr/>
	\$176.83
Branch commissions	23.00
	<hr/>
Total	\$199.83

It seems undesirable that the Branch commissions should be charged against the appropriations for the General Committee on Membership. They should be taken care of from an incidental fund.

The Journal has won wide favor and is the most important factor in extending the membership. Secretary Beal has assisted the Committee in every way and has judiciously distributed sample copies of the Journal to prospective members with good results. As the Journal becomes more firmly established it is felt that the results in the gaining of new members will be much more evident and the next few years should show a most decided growth. The Branches have it within their power to stimulate the local interest and add many new members through their meetings. The St. Louis Branch has been reorganized during the year and as a result of the efforts of its officers ably seconded by Treasurer Whelpley quite a number of new members from St. Louis have been secured.

All of which is respectfully submitted,

W. B. DAY, Chairman.

Geographic summary of new members elected since September 1911, and up to August 1, 1912.

Army Hospital Corps	108	Maine	2
Alabama	0	Maryland	0
Arizona	0	Massachusetts	7
Arkansas	1	Michigan	9
California	5	Minnesota	6
Colorado	22	Mississippi	0
Connecticut	2	Missouri	20
Delaware	0	Montana	1
Florida	1	Nebraska	9
Georgia	2	Nevada	1
Idaho	0	New Hampshire	0
Illinois	20	New Jersey	6
Indiana	6	New Mexico	0
Iowa	5	New York	16
Kansas	3	North Carolina	0
Kentucky	2	North Dakota	0
Louisiana	1	Ohio	15

Oklahoma	0	Washington	17
Oregon	2	West Virginia	1
Pennsylvania	18	Wisconsin	3
Rhode Island	0	Wyoming	0
South Carolina	1	District of Columbia.....	2
South Dakota	2	Canada	3
Tennessee	3	Cuba	2
Texas	3	Panama	2
Utah	0		
Vermont	1	Total	331
Virginia	0		

RESOLUTION CREATING A HOUSE OF DELEGATES AND DEFINING ITS FUNCTIONS AND DUTIES.

(Adopted by the Council August 19, 1912.)

(1) There is hereby created a House of Delegates to have and exercise such functions as are herein or may be hereafter specified by the Council.

(2) Until the membership of the House of Delegates shall be otherwise determined by the Council, it shall consist of such regularly elected or appointed delegates from state and local pharmaceutical societies, colleges and schools of pharmacy and delegates from the National Association of Retail Druggists, National Wholesale Druggists Association, American Medical Association, National Association of Boards of Pharmacy, Women's Organization of the National Association of Retail Druggists, National Association of Manufacturers of Pharmaceutical Products, American Chemical Society, Association of National and State Food and Dairy Departments, the National Association of Pharmacologists, Pharmacists in Departments of U. S. Government Service, and the A. O. O. C., the credentials of all of whom shall be approved by the Council, and five members of the Council appointed by the Chairman of the Council. The President, President-Elect, Treasurer, General Secretary, and the Chairman and Secretary of the Council shall be members ex-officio.

(3) The elected or appointed delegates shall hold office for one year, or until the credentials of their successors shall have been approved by the Council. Each society or institution recognized shall be entitled to three delegates, and each delegate shall be entitled to one vote. No delegate shall act as the proxy of another delegate not present, nor as delegate for more than one society or institution. Any member of the Association may attend any session of the House of Delegates, and shall have the privilege of the floor.

(4) The House of Delegates shall organize annually by the election of a Chairman, two Vice-Chairmen and a Secretary. For the purpose of such annual organization the first session of the House shall be called to order by the Chairman, one of the Vice-Chairmen or the Secretary of the preceding House, or in the absence of all of them, by the Secretary of the Council.

(5) The House of Delegates shall have authority to adopt all rules and regulations necessary to the proper conduct of its business, and not inconsistent with the Constitution and By-Laws of the Council.

(6) The House of Delegates shall hold at least one session during the annual meeting of the Association, at an hour previously determined by the Council, and such additional sessions as may be necessary for the transaction of its business, but shall make a final report of business transacted to the final session of the outgoing Council at each annual meeting.

(7) Until otherwise determined the House of Delegates shall exercise the following functions:

(a) To receive and consider the reports of delegates from the bodies which they represent in the House of Delegates.

(b) To consider and report upon such resolutions, and such other subjects as shall be referred to the House of Delegates by the Council or by the Association in General Session.

(c) To act as a general committee on resolutions and to report to the Council not later than its last session a series of resolutions upon topics concerning the general welfare of the Association or concerning any features of the Association's work.

(8) Until otherwise provided the order of business at the first session of the annual meeting of the House of Delegates shall be as follows:

(a) Calling the roll of delegates whose credentials have been approved by the Council.

(b) The election of officers.

(c) The appointment by the chair of a sub-committee on resolutions to prepare and put into proper form resolutions for subsequent consideration by the House of Delegates.

(d) The reading of communications from the Council or from the Association in general session.

(e) Calling the roll of delegations for the reception of reports, resolutions and communications. At all subsequent sessions of each annual meeting the order of business shall be such as the House of Delegates shall determine.

(9) At its first annual meeting the House of Delegates shall consider and report to the Council a body of by-laws and any recommendations it may have to offer concerning the form of organization, method of working, or concerning the scope and character of the functions which should be exercised by the said House of Delegates.

REPORT OF THE NOMINATING COMMITTEE.

The Nominating Committee of the American Pharmaceutical Association Committee, consisting of two delegates from each state, territory and districts represented and of five delegates-at-large, convened immediately after adjournment of the first general session of the Association on Monday, August 19, in the Trinity Church. The meeting was called to order by H. M. Whelpley of Missouri. On nomination of Caswell A. Mayo of New York, Mr. Whelpley was unanimously

elected Chairman. On nomination of J. H. Beal of Ohio, Caswell A. Mayo of New York was elected Secretary. Nominations being called for, four members were nominated as candidate for President. A ballot being taken, the three following nominees were declared to have received the largest number of votes and announced by the Chairman as being the choice of the committee:

For President: Charles M. Ford of Colorado; George M. Beringer of New Jersey, F. W. Meissner, Jr., of Indiana.

The following nominees were named without contest:

For First Vice-President: Franklin M. Apple of Pennsylvania, José P. Alacán of Cuba, Ernest Berger of Florida.

For Second Vice-President: G. H. P. Leichthardt of California, W. S. Richardson of the District of Columbia, John C. Wallace of Pennsylvania.

For Third Vice-President: S. K. Sass of Illinois, L. D. Havenhill of Kansas, D. F. Jones of South Dakota.

Candidates for Council, three of whom are to be chosen: J. G. Godding of Massachusetts, S. L. Bressler of Colorado, H. C. Packard of Massachusetts, L. C. Lewis of Alabama, Charles E. Caspari of Missouri, W. J. Teeters of Iowa, W. C. Anderson of New York, Charles Caspari, Jr., of Maryland, and Leonard A. Selzer of Detroit.

Respectfully submitted,

CASWELL A. MAYO, Secretary.

H. M. WHELPLEY, Chairman.

REPORT OF COMMITTEE ON TIME AND PLACE.

Your Committee on Time and Place of Meeting respectfully reports that the Association has received invitations to hold its annual meeting in 1913 from:

Buffalo, New York;
Cedar Point, Ohio;
Cincinnati, Ohio;
Grand Rapids, Michigan;
Indianapolis, Indiana;
Nashville, Tennessee;

and an invitation from San Francisco to hold the annual meeting for 1915 in that city.

As the places for holding the meetings of the Association for 1911 and 1912 are some two thousand miles apart, your Committee believes that the next meeting should be held at some central point easily accessible to all the members of our Association; and it therefore recommends that:

The annual meeting for 1913 be held in the city of Nashville, Tennessee, during

the third week in August, or at such date as may be mutually agreed upon by the local committee of the Council:

It further recommends that:

The local committee and the Committee on Transportation obtain full particulars in relation to rates and routes, prices for hotel accommodations, etc., and file the same with the Secretary at such a date as will enable him to bring this information before the annual meetings of the several State Associations.

It further recommends that the invitation from San Francisco to hold the meeting for 1915 in that city be turned over to the incoming Committee on Time and Place of Meeting for consideration.

Respectfully submitted,

THOS. F. MAIN, Chairman, New York.

F. C. GOLDBOLD, New Orleans.

CHAS. HOLZHAUER, New Jersey.

J. C. BURTON, Oklahoma.

W. MITTELBACH, Missouri.

THE BACKBONE OF THE DRUG STORE.

The backbone or most important department of every drug store, whether located in the city or small town, should be that portion devoted to the filling of prescriptions.

In all towns the doctor, or doctors, as the case may be is either friendly or unfriendly to the druggist. Where an unfriendly condition exists it may be due either to the narrow-mindedness of the doctor or the druggist himself. Any physician who is practicing medicine, both for the love of the profession and the money he can derive therefrom, would much prefer to prescribe in preference to dispensing his medicine. The physician who dispenses his own medicine will easily add from \$400 to \$800 to his annual expense account; whereas, his brother practitioner who prescribes will add approximately that amount to his bank account. At least fifty per cent of the people who get medicine from a dispensing doctor never pay for it—but, if the physician gives the patient a prescription instead of the medicine, the druggist as a business man will demand the cash upon the delivery of the prescription, provided the patient's credit is not good, thus minimizing the physician's loss by crediting dead-beats.

If these conditions are discussed with the physician, and if the druggist is a competent pharmacist and will carry the desired line of prescription material, no sane physician can object to doing an absolute prescription business.—*R. L. Sanford in the Western Druggist.*

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

THE ELECTROLYTIC DETERMINATION OF SOME OF THE ZINC SALTS OF THE PHARMACOPOEIA.

JOSEPH ROSIN.

The literature on the estimation of zinc is very extensive and more seems to have been written about the determination of zinc than that of any other of the technically important metals. Yet a rapid and accurate method for its estimation, gravimetrically or volumetrically, is still a problem to be solved. The report of the Committee on Quantitative Methods of the Pharmaceutical Section of the American Chemical Society¹ shows that widely disagreeing results were obtained by different workers using the same method.

The gravimetric methods are time consuming, and even with the exercise of the greatest care, present several sources of error. Of the volumetric processes, the sodium sulphide and the ferrocyanide are reliable and are extensively used in technical laboratories. These two methods are, however, too much influenced by experimental conditions, and while satisfactory for the analysis of zinc ores and alloys, they are not readily applicable to the determination of the pharmacopoeial zinc salts. With a requirement of 99 to 99.5 per cent. purity for zinc salts, but little allowance remains for error in the determination, because of the high molecular weights of most of the zinc salts of the pharmacopoeia, the least variation in the result makes a considerable difference in the percentage of the salt. For the determination of zinc salts a method is therefore needed which is first of all the most accurate, and second, if possible, rapid. The electrolytic method meets both these requirements.

With the aid of the electric current zinc salts are rapidly and most accurately determined. The procedure is very simple, hence its accuracy—and requires no extraordinary skill or care. A determination can easily be made in the course of less than one hour, the analyst's time consumed amounting only to 15-20 minutes. There being practically no source of error, unless ordinary care be grossly neglected, the method is such as to inspire one with confidence in the results—a point of the utmost value in any method, in any line of work.

Several electrolytes can be used², all yielding equally good results. Sodium hydroxide is the simplest and is well adopted for the determination of all the pharmacopoeial zinc salts. A weighed quantity of the salt corresponding to 0.1-

¹J. Ind. Eng. Chems., p. 467. 1912.

²E. F. Smith's Electrochemistry.

0.2 grams of metal contained in the previously weighed electrolyzing dish is dissolved in a little water or dilute sulphuric, or hydrochloric acid, 75 cc. of 10 per cent sodium hydroxide solution added, diluted with water to about 120-130 cc., the solution heated almost to boiling and electrolyzed for 20-30 minutes with a current of 4-5 amperes and 5-6 volts, the anode making about 600 revolutions per minute. Without interrupting the current, the deposit is then washed with distilled water with the aid of a siphon, until the current drops to nearly zero, then remove the dish and wash the deposited zinc with a little alcohol and ether, dry in the desiccator for a few minutes and weigh.

For the analysis of zinc metal about 1.5 gm. of it is dissolved in dilute hydrochloric acid, filtered if necessary, diluted with water to 100 cc. and 10 cc. taken for the determination. Zinc stearate dissolves but very slowly in caustic soda. To determine the zinc in it, it is best to boil about one gram with 10 cc. of dilute sulphuric acid and 25 cc. of water, filter while hot into the electrolyzing dish, wash with hot water until the volume of the filtrate amounts to about 120 cc. then add 8 gm. Sodium Hydroxide and electrolyze.

The following figures will illustrate the results obtained by the electrolytic method. It will be noted that the percentages of the salts containing water of crystallization are over 100. This is due to a deficiency in the water of crystallization.

<i>Zinc Metal</i>		<i>Zinc Acetate</i>		
	Per cent. zinc found	Per cent. zinc found	Per cent. zinc acetate	
1	99.07	30.40	102.01	
2	99.04	30.34	101.82	
3	99.09	30.37	101.94	

<i>Zinc Oxide</i>		<i>Zinc Phenolsulphonate</i>		
	Per cent. zinc found	Per cent. ZnO	Per cent. zinc found	Per cent. zinc phenolsulphonate
1	80.00	99.58	11.80	100.28
2	80.10	99.70	11.79	100.19
3	80.10	99.70	11.78	100.11
4	80.06	99.64	11.79	100.19

<i>Zinc Stearate</i>		Per cent. ZnO
	Per cent. zinc found	
1	11.70	14.56
2	11.72	14.59
3	11.69	14.55

For all these determinations a nickel dish was used. Nickel is admirably well adapted for the depositing of zinc by electrolysis. It has the advantage over platinum because the deposit dissolves very readily in dilute sulphuric acid and the cost of nickel as compared with platinum is nominal. If platinum is used it should be first coated with a layer of silver (see Smith's Electrochemistry).

The results obtained by the electrolytic method leave nothing to be desired. The installation of an electrolytic apparatus in an analytical laboratory is an investment which rapidly pays for itself.

A MODIFICATION OF THE U. S. P. ASSAY PROCESS FOR OPIUM PREPARATIONS.

S. L. HILTON.

The method of assay for preparations of opium as given in the U. S. Pharmacopœia, while giving good results, is far from satisfactory for the reason that it is exceedingly tedious in carrying out owing to slow filtration, consequently more time is consumed than necessary. Again the method as given for handling the dried crystals, transferring them from the filter paper to a tared watch-glass, will invariably result in a loss of some of the crystals either by adhering to the filter paper so closely that they cannot be removed entirely, or by the finer crystals flying and being carried off in the air, the result being that the final assay will show results lower than what they should be. The transferring of the crystals to a flask and agitating them with lime water causes another loss, due to some of the finer particles flying in the air and also by the frothing in the flask, the frothing is very troublesome and the filtration following is very slow.

In looking for some method to overcome these difficulties the Gooch crucible suggested itself to me about a year or so ago. It seemed feasible for assaying opium preparations and I thought it would possibly solve the problem and eliminate the difficulties cited above. After numerous trials and noting the results obtained I found the process practicable and rapid so that now I never use the process as outlined in the U. S. P., but follow a modified process using the Gooch crucible with a corresponding saving of time and invariably obtain higher and more concordant results.

Before giving the method in detail permit me to state the apparatus necessary, all of which is inexpensive. A porcelain Gooch Crucible, 25 cc. capacity; a filter tube; two side-neck flasks, known as filtering flasks; about 500 cc. capacity; a good filter pump; some heavy walled rubber tubing, for connecting the flasks and the flask to the pump; some pure gum tubing, to make a tight joint between the crucible and filter tube and some C. P. asbestos, shredded by scraping with a knife and suspending same in distilled water. This should be kept on hand ready for use.

With this method I transfer 100 cc. of Tincture of Opium or other liquid opium preparation to an evaporating dish and evaporate it on a waterbath to about 20 cc., add 40 cc. of distilled water, mix thoroughly and set the liquid aside for one hour, occasionally stirring to disintegrate the resinous flakes adhering to the dish. Having set up a 25 cc. Gooch crucible and prepared a matrix of asbestos by pouring some of the solution suspended in water in the crucible, after starting the filter pump, wash the matrix with alcohol and ignite the crucible, when cold, connect the crucible, after emptying the filter flask and rinsing the same with distilled water, pour carefully the contents of the dish into the crucible after starting the filter pump, when all of the liquid has passed through, disconnect the flask and reserve the filtrate for the final evaporation. Connect the flask again and wash the mass on the filter until completely exhausted (indicated by almost a colorless filtrate and the absence of bitterness). Evaporate the washings in a tarred dish

to a small volume, then add the first filtrate, rinsing the vessel with several small portions of distilled water, and evaporate the whole to a weight of 14 gm.

Proceed as directed under Opium, U. S. P. VIII, page 329, beginning rotate the concentrated solution about in the dish until the rings of extract are redissolved, etc., After standing six hours or over night as directed, proceed as follows:

Having set up the Gooch crucible, prepared the matrix as previously indicated, wash with alcohol and ignite, cool in the desiccator and weigh, noting the weight of the crucible. Remove the stopper carefully from the flask, and should any crystals adhere to it, brush them into the flask. Wet the matrix in the crucible well with ether, and decant the ethereal solution in the flask as completely as possible upon the matrix in the crucible, after starting the filter pump. Add 10 cc. of ether to the flask and proceed as directed in the U. S. P. VIII, using the Gooch crucible for the purpose of collecting and washing the morphine crystals, as therein directed. When this has been completed, remove the Gooch crucible and dry same in the oven at a moderate temperature not exceeding 60 C. (140 F.), until the weight of the crucible and its contents remains constant. Note the weight and deduct the weight of the crucible previously obtained. This gives the weight of the impure Morphine.

Replace the Gooch crucible and pass lime water through the crucible (10 cc. for each 0.1 gm. of Morphine), reducing the vacuum in the filter flask so that the lime water comes through slowly, dissolving out the morphine, then wash the crucible with more lime water until after acidulation, the washings no longer yields a precipitate with mercuric potassium iodide, disconnect the crucible and dry in the oven at a temperature of 100 C. (212 F.) to a constant weight, deduct the weight of the crucible, this gives the weight of the insoluble matter in the crucible to be deducted from the weight of the impure morphine previously obtained, this difference represents the percentage of crystallized morphine in 100 cc. of the tincture or liquid preparation assayed.

For liquid preparations of opium and powdered opium this process works well, is a decided saving of time and gives a trifle higher but more concordant results; whether it will work satisfactorily on gum opium I am unable to say as I have not had occasion to try it.

The pharmacist who will equip himself with this apparatus will find that he has something that not only will prove of decided value to him in assaying opium preparations, but will be of service in expediting work at his prescription counter when it is necessary to filter prescriptions containing pepsin in solution, or a prescription like fluidextract of ergot diluted with distilled water and many others of a similar nature, with the loss of practically no time or unnecessary waiting on the part of a customer and at the same time dispensing the prescription in a presentable condition, more satisfactory to the physician and more presentable to the patient.

Many things will suggest themselves when possessing the necessary apparatus as for instance a short time ago it was necessary to make 500 cc. Elix. Pepsin and Bismuth, N. F., quickly and send it out right away. With a 25 cc. Gooch crucible I was able to filter it perfectly clear and dispense same in less than fifteen minutes.

Section on Education and Legislation

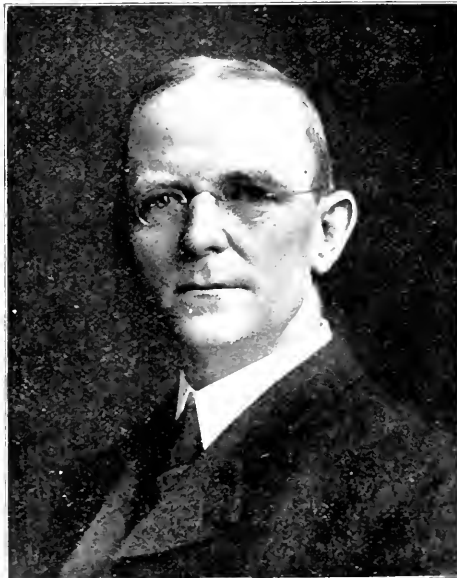
Papers Presented at the Sixtieth Annual Convention

THE CHAIRMAN'S ADDRESS.

JOHN C. WALLACE.

The by-laws governing the Section on Education and Legislation provide three specific duties for the Chairman, in addition to presiding at the sessions of the Section.

First, the delivering of a *short* address; second, the preparation of a program or suitable topics for discussion; third, proposing for the several state associations, suitable topic for discussion and making a report on the same at the annual



JOHN C. WALLACE, Chairman.

meeting. All of these I have endeavored to comply with. My address will be short and as many of the addresses delivered by my predecessors have been along educational lines, I will depart from the beaten path and confine myself largely to the legislative side, as legislation, to my mind, is an all-absorbing topic of today.

My requests for papers for this Section have been generously responded to and I have prepared a program covering a list of more than twenty-five papers and I desire to express my appreciation and sincere thanks for this generous response.

My efforts in relation to the third duty have been somewhat disappointing. I extended greetings to twenty-five State Associations, and suggested as a subject for discussion, "By Whom Should Food and Drug Laws be Enforced," which, in my judgment, they should all have been interested in, and up to the present time I have had but two responses. In addition to these greetings it was my privilege to visit two of the State Associations, Ohio and Pennsylvania.

It was also my privilege to attend the annual convention of that great organization, the National Association of Retail Druggists at Niagara Falls, and to participate in the deliberations of the National Legislative Conference held under auspices (this will be referred to later), by the delegates in a report to the Council.

It has been a matter of keen regret to me, that some action was not taken on the recommendation of Prof. Hynson, at the Boston meeting, as Chairman of the Committee on Legislation, in regard to the formation of "The Legislative Conference of the American Pharmaceutical Association." In order that it might be used as a clearing house in matters pertaining to legislation for the different branches of the drug business, all of which are affiliated with the American Pharmaceutical Association.

When we take up the study of the pharmacy and pure drug laws and come to a realization of the wonderful diversified ideas incorporated therein, we will come to the conclusion that a clearing house is badly needed.

All pharmaceutical legislation has had and will continue to have three fundamental aims in view. The advancement of pharmacy as a profession, the protection of the pharmacist and, of equal, if not greater importance, the protection of the people. Fortunately these three things are so closely allied that laws affecting or benefiting one are apt to have the same result upon another. New features of course arise each year as new conditions are encountered.

The one problem that stands foremost to my mind is to pass laws that will meet the conditions and give protection and still not be too drastic. It sounds like the impossible, and I confess the solution is beyond me and I think I may safely say beyond any one man. Satisfactory and practical pharmacy laws (I mean here laws that are satisfactory to the majority). There are too many interests affected for them to be satisfactory to all; satisfactory and practical pharmacy laws are the result of months and often years of work and study on the part of men realizing their need and far-reaching importance, and looking at the question from every side.

The problems are very much the same throughout the various states. The laws enacted show clearly what these problems have been and how met. A comparison of the various legislative measures of these states on subjects now most before the public makes them stand out more forcibly than anything I could say on this subject. I make a brief tabulation along this line later.

Some of the states are making rapid advancement in pharmaceutical legislation. Others have laws that do not seem to be adequate for present conditions. However, doubtless they are not satisfied with them themselves and regard them as a stepping stone. Any one having experience along this line appreciates fully the difficulty of obtaining what you want, especially when a radical change or advance is contemplated. It takes time and gradual advancement to bring the de-

sired result. Through all the ages, advancement along any line or in any profession has had to contend with, "The old was good for my father and for me, why change?"

It has been said by one of our most distinguished statesman that legislation was universally a case of compromise; it therefore cannot be wondered, at the diversified character of legislation which is to be found upon our statute books.

That there was abundant need of such legislation as the Federal Food and Drugs Act will not be denied; for the benefits accruing from it are discernable upon every hand. Many articles which were formerly offered as pure are now entirely eliminated and those of us who have been actively engaged in the practice of pharmacy since its enactment realize the advantages it has been not only to us but to the whole people. Few will dispute the fact that the Food and Drugs Act has been successful in performing a very important mission, but experience has taught us that it should go still farther and there is at this time undoubtedly a need for its being amended, as there is also a need for other national legislation upon lines which seem to us to be very important.

That there should be a remedy for the false, extravagant, and misleading claims which are made in regard to the many worthless preparations with which the country is flooded, is almost unanimously conceded, I am of the opinion that all patent or proprietary preparations should be manufactured by or under the supervision of one who has been thoroughly trained and qualified for the purpose.

Twelve of the states have already adopted the single standard, and I see no reason why a single standard should not be established under the law for preparations for which a formula is given in the authorities recognized by the act. As to crude drugs and chemicals, the label should explicitly state in unmistakable terms wherein they differ from the official standard, so that anyone purchasing the same would know exactly what they were buying.

The exclusion of wood alcohol from preparations for external use only is not, in my judgment, justified.

There is an absolute necessity for a national law that will give a complete record of all sales of habit-forming drugs in interstate commerce. So that the same can be transmitted to those having the enforcement of the state narcotic laws, as intrastate regulation loses much of its effect without interstate regulation. And this can be done without levying any additional tribute on the trade, by enacting a law requiring registration of all sales of narcotic or habit-forming drugs or preparations containing more than a maximum amount of the same, made in interstate commerce and reporting the same monthly to a central bureau in the department at Washington. The department at Washington to furnish monthly, a copy of the record of all sales or shipments of such drugs or preparations into a state, to the authorities having the enforcement of the narcotic laws in that particular state.

Every state in the Union has enacted a Pharmacy law, all of which were originally founded upon the same lines. Many of them have been constantly amended and many need still further amendments. The enforcement of all these laws is entrusted to the Boards of Pharmacy. I deem it unnecessary at this time to take up these laws separately and classify the different conditions relating

thereto, as it would be almost an endless task. I will however, a little later, cite a number of principles which I think should be incorporated in them.

Since the enactment of the federal law, forty-four states of the Union have enacted food and drug laws, and in the enactments of the various states, the wonderful diversified opinions as they relate to pharmaceutical legislation is made manifest, and for the purpose of illustrating this I have scheduled a number of the features of the state laws.

ENFORCEMENT OF STATE LAWS—DRUGS.

BOARD OF PHARMACY.	BOARD OF HEALTH.	FOOD AND DAIRY COMMISSIONER.
Delaware.	California.	Michigan.
Illinois.	Colorado.	Missouri.
Iowa. (Commission).	Indiana.	Ohio.
Massachusetts.	Kansas.	South Dakota.
New York.	Louisiana.	Texas.
Pennsylvania.	Montana.	Washington.
Virginia.	New Hampshire.	Total, 6.
Total, 7.	New Jersey.	
	Vermont.	
	Total, 9.	
DEPT. OR COM. AGRICULTURE.	AGRICULTURAL EXPERIMENT STATION.	
Florida.	Nevada.	
Georgia.	North Dakota.	
North Carolina.	Total, 2.	
Total, 3.		
COM. OF AGRICULTURE AND INDUSTRIES.	DAIRY COMMISSIONER AND DIRECTOR AG. EX. STATION.	
Alabama.	Connecticut.	
DAIRY, FOOD AND SANITARY INSPECTOR.	DAIRY, FOOD AND DRUG COMMISSIONER.	COMMISSIONER UNDER BOARD OF HEALTH.
Idaho.	Nebraska.	Maryland.
DIRECTOR AGRICULTURAL EXPERIMENT STATION.	COMMISSIONER HEALTH.	
Maine.	Oklahoma.	

COMMISSIONS.

Arkansas, by State Treasurer, Secretary Agriculture, Mines and Manufactures, and Secretary of State.
 Kentucky, by Director Agricultural Experiment Station, and one member from State Medical and State Pharm. Associations.
 Rhode Island, by Board of Food and Drug Commissioners.
 South Carolina, by Board of Health and one Druggist.
 Tennessee, by Food and Drug Inspector.
 West Virginia, by Agricultural Department and County Prosecuting Attorneys.
 Wyoming, by Dairy, Food and Oil Commissioner.

ENFORCEMENT.

Only five of the states of the Union have not enacted pure drugs laws, viz., Arizona, Minnesota, Mississippi, New Mexico and Oregon. Wisconsin has a pure drugs law that relates only to flavoring agents, and specifically sets forth a standard for each one.

Twelve of the states have adopted a single standard for all official preparations. They are: Colorado, Delaware, Florida, Idaho, Illinois, Kansas, Louisiana, New York, Ohio, South Carolina, Texas, and West Virginia.

Five of the states have a restricted standard; Maryland permits of variations same as the federal law, except the preparations of opium, from which no variation is permitted.

New Jersey, of no variation from the official standard of the official preparations of opium, camphor, ginger, peppermint and iodine.

Pennsylvania permits of no variation from the official standard of the official preparations of opium, iodine, peppermint, ginger, camphor and ethyl nitrite.

Tennessee provides that no tincture iron or preparation of opium, iodine, camphor, ginger or peppermint, as defined in the U. S. P. or N. F., shall in strength differ from the standards therein laid down.

Virginia permits of variations the same as the federal law, except laudanum, which must conform strictly to the standard in every way; other official preparations of opium may differ from standard as to amount and strength of alcohol only and must be plainly stated on the label.

Seventeen of the states, Alabama, Arkansas, Colorado, Florida, Georgia, Iowa, Kentucky, Michigan, New York, North Carolina, Ohio, Pennsylvania, South Carolina, South Dakota, Utah, Vermont and West Virginia exempt prescriptions U. S. P. and N. F. preparations from the labeling clause.

Two of the states, Nebraska and New Jersey, exempt prescriptions, recipes U. S. P. and N. F., from the labeling clause.

Nine of the states, California, Idaho, Indiana, Kansas, Louisiana, Maine, Maryland, Missouri and North Dakota, exempt prescriptions from the labeling clause but require all U. S. P. and N. F. preparations to be labeled.

Connecticut and Tennessee exempt prescriptions and U. S. P. preparations to be labeled.

Virginia exempts prescriptions and U. S. P. preparations and N. F. preparations, provided they are of official standard.

Montana exempts prescriptions and the alcohol content is not required, but aside from the alcohol content U. S. P. and N. F. preparations are not exempt.

Delaware does not require the ingredients to be stated on the label and makes no provision for misbranding.

Nevada makes no provision for a statement of any of the so-called interdicted articles to be made upon the label.

New Hampshire, Texas, Washington and Wyoming require prescriptions, U. S. P. and N. F. preparations to be labeled with all of the interdicted articles; Texas however, does not require a statement as to alcohol content.

Thirty-seven of the states, Alabama, Arkansas, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Utah, Virginia, Washington, West Virginia prohibit the sale of cocaine except on prescription. California permits the sale of cocaine in preparations that do not contain more than one grain to the ounce.

The District of Columbia permits the sale of cocaine in preparations that do not contain more than one-fourth grain to the ounce.

Idaho and Wisconsin permit the sale of preparations that contain not more than one-eighth grain to the ounce.

Rhode Island and Texas permit the sale of preparations of cocaine that do not contain more than one-sixteenth grain to the ounce.

Wyoming, Narcotic Law.

Seven of the states prohibit the sale of opium or its derivatives or preparations except on the prescription of a physician. They are: Florida, Indiana, Kansas, Michigan, New Jersey, Oregon and South Dakota.

Rhode Island permits the sale of preparations containing not more than six grains to the ounce.

Georgia and West Virginia permit the sale of preparations that contain not more than four grains to the ounce.

Massachusetts permits the sale of preparations that contain not more than two and one-half grains of opium per ounce.

Alabama, Arkansas, California, District of Columbia, Idaho, Louisiana, Maryland, Montana, New Mexico, New York, outside of the city of New York; North Carolina, Texas, Virginia, Washington, Wisconsin and South Carolina, sixteen in all, permit the sale of preparations containing not more than two grains of opium to the ounce.

PREREQUISITE LEGISLATION.

But three states in the Union have inscribed upon their statute books a prerequisite law, New York, Pennsylvania and Rhode Island.

A prerequisite law has been under discussion by a number of the State Pharmaceutical Associations, but in some quarters has met with much opposition. Those who are opposed to the prerequisite law want to compromise the proposition by making the requirement that it should be graduation from a recognized school of pharmacy or an equivalent of education, to be determined by the Board of Pharmacy.

In the first place, I know of no place where a pharmaceutical education, equivalent to that required for graduation from a reputable college of pharmacy, can be obtained, except from such a college.

In the second place, boards of pharmacy cannot, or at least do not, give sufficient time in their examinations to ascertain if the applicants have the equivalent of graduation.

Third. The requirement of graduation from a recognized school of pharmacy, to my mind, removes to a great extent, the question of politics from the Board of Pharmacy, and leaves no loophole for one without the requisite qualifications, but with a strong political affiliation, to become a registered pharmacist.

During the enactment of the prerequisite law in Pennsylvania, I had the honor of being Chairman of the Committee on Legislation of the Pennsylvania Pharmaceutical Association, and many curious ideas and objections were encountered, one of which was the plea that we are placing a barrier upon the poor boy who was ambitious to become a registered pharmacist, but I am fully convinced that any young man who is honest, industrious, intelligent and ambitious can become a graduate of any reputable college of pharmacy in the United States, without being an object of charity from anyone.

PRINCIPLES OF PHARMACY LEGISLATION.

As to suggestions of principles which I think should be incorporated in a pharmacy law, I submit the following:

That all laws relating to pharmacists should be executed by pharmacists.

That a store remote from a pharmacy should be licensed to sell drugs and medicines, in original packages, put up by or under the supervision of a pharmacist, when properly labeled with dose and directions.

That a pharmacy should be licensed, and the same renewed annually, a charge being made for the license and for each renewal. The applicant for this license and for each renewal, shall state in the application the location of the pharmacy, the name or names of the person, firm or corporation owning or conducting the same and the names of all persons and employes engaged in the conduct or carrying on of the same, who are registered as pharmacists or assistant pharmacists, with the number and date of their certificate of competency and qualification. This license shall entitle the holder thereof to own or conduct a pharmacy at the place only for which it is issued. Same can be transferred and in the name only of the holder, and without charge.

That pharmacists and assistant pharmacists be licensed, the same to be renewed annually, without charge.

That each applicant for examination and registration shall have a preliminary examination, the equivalent of at least a completed first year in a high school.

That students of pharmacy should be registered and must have a preliminary education which would entitle them to make application for examination and registration as an assistant pharmacist, after having had the required amount of experience.

That any license to practice can be refused, suspended or revoked for good and sufficient reasons, same to be stated in the Act, but not without notice and a hearing.

That all certificates and all licenses shall be conspicuously exhibited in the place of business or where the licensed pharmacist or assistant pharmacist is employed.

That the license shall be used only by the person to whom it is issued, and no license shall be used to conduct more than one pharmacy or one licensed store.

The right of interchange of certificates with other states having equivalent requirements.

That it shall be a misdemeanor to impersonate an applicant who shall be applying either for a certificate or for a license.

That all rules and regulations made by the Board must be approved by the Attorney General.

That drugs administered or dispensed by physicians must conform to the standard of strength, quality and purity as fixed by the laws of the commonwealth.

That no person shall use the title pharmacist or assistant pharmacist, except when so licensed, or that of pharmacy or licensed store, except when holding a license.

That every pharmacy must have a copy of the latest edition of the U. S. P. and National Formulary.

That the authorized agents of the Board shall have the right to enter any place where drugs are compounded, dispensed or sold, for the purpose of purchasing samples, and the right to purchase samples in order that tests may be made.

That all drugs offered for sale at retail must be plainly labeled.

That the sale of poisons be restricted and the registration clause be strictly enforced.

That all physicians' prescriptions compounded and dispensed shall be filed by the pharmacist and kept for a reasonable period, to be stated in the Act, and during that period shall be open to inspection by the police authorities upon presentation of an order from the court or to the members of the Board.

That when a physician indicates in writing that a prescription is not to be renewed, it shall be a misdemeanor to either renew or give a copy of the same.

There doubtless are many other principles which should be incorporated, and which a conference would bring out.

In conclusion, I have but one recommendation to make, and that is to repeat the recommendation, made at the Boston meeting by Professor Hynson, as Chairman of the Legislative Committee, that a National Legislative Conference be established under the auspices of the American Pharmaceutical Association.

REPORT OF THE SECRETARY OF THE SECTION ON EDUCATION AND LEGISLATION OF THE AMERICAN PHARMA- CEUTICAL ASSOCIATION.

WILBER J. TEETERS, IOWA CITY, IA.

In the even numbered years occur the long sessions of Congress and fewest meetings of the state legislatures.

Regularly there are sessions of the legislatures of fourteen states during the even numbered years and forty-one states during the odd numbered years, not counting Oklahoma, where sessions are held every four years.

The year 1912, therefore, has had few meetings of legislatures, and an unusually small amount of legislation effecting the profession of pharmacy was presented.

The following states had meetings of the legislature during the past year: Arizona, Georgia, Kentucky, Louisiana, Massachusetts, Maryland, Mississippi, New Jersey, New Mexico, New York, Rhode Island, South Carolina, Vermont and Virginia.

The following is a summary of the legislation for the year:

KENTUCKY.

An Act to Regulate the Sale of Opium or its Alkaloidal Salts or their Derivatives, or any Admixture Thereof.

Be it enacted by the General Assembly of the Commonwealth of Kentucky:

Section 1. Opium or its alkaloidal salts or their derivatives, or any admixture containing opium or its alkaloidal salts or their derivatives, shall be sold or dispensed only by a registered pharmacist upon the original written, dated and signed prescription of a legally licensed physician or dentist or veterinary surgeon; and only one sale shall be made on said pre-

scription, and each such prescription shall state upon its face the quantity of said opium, its alkaloidal salts and their derivatives, also the name of the patient and the date said prescription is filed. And opium or its alkaloidal salts or their derivatives, or any admixture containing opium or its alkaloidal salts or their derivatives, shall be sold at wholesale only to registered pharmacists, legally qualified physicians, dentists, and veterinary surgeons. Provided, however, that any preparation, patent, proprietary or otherwise containing not more than two grains of opium or one-fourth of a grain of its alkaloidal salts or their derivatives to the ounce, or admixture of ipecac and opium commonly known as Dover's Powder, or the anti-spasmodic mixtures of the National Formulary official at the time of the sale, or lotions, liniments, suppositories, ointments, and plasters, plainly labeled "For External Use Only" may be sold or dispensed by registered pharmacists without any prescription. Any registered pharmacist, legally licensed physician, dentist, or veterinary surgeon, or any person not a registered pharmacist, licensed physician, dentist or veterinary surgeon, who shall prescribe for, procure for, or sell, or dispense to any person opium or its alkaloidal salts or their derivatives, or any admixture containing opium or its alkaloidal salts or their derivatives, or otherwise deal in the same for any purpose other than for the legitimate use as herein provided, shall thereby render himself amenable to the penalties as in this act provided. And provided further, that the provisions of this section shall not apply to the sales made by wholesale druggists to each other or to registered pharmacists or to legally licensed physicians, dentists, or veterinary surgeons, or to hospitals, sanatoriums, colleges, public and scientific institutions, nor to sales made to manufacturers of proprietary or pharmaceutical preparations for use in the manufacture of such preparations, nor to the sale at wholesale to general merchants or at retail by general merchants of patent or proprietary medicines containing not more than two grains of opium or one-fourth grain of morphine, or one-fourth grain heroin or three-fourths grain of codeine in one ounce.

Any person failing to comply with the requirements of this section shall be deemed guilty of a misdemeanor, and upon conviction shall pay a fine of not less than twenty nor more than one hundred dollars.

Section 3. All acts and parts of acts in conflict with this act are hereby repealed.

Approved March 14, 1912.

MASSACHUSETTS.

An act to Exempt Druggists and Drug Clerks from Restrictions of the Civil Service Law.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows: Section 16 of Chapter 19 of the Revised Laws is hereby amended by adding at the end thereof the following: The word vendor shall not apply to the proprietors of drug stores or their employees,—so as to read as follows:

Section 16. No person habitually using intoxicating liquors to excess and no vendor of intoxicating liquors shall be appointed to or retained in any office, appointment or employment to which the provisions of this chapter apply. The word vendor shall not apply to the proprietors of drug stores or their employees.

Chapter 225, Revised Laws, dated Jan. 16, 1912.

The following amendment was also passed relative to the sale of insecticides containing compounds of flourine:

Section 2 of Chapter 213 of the Revised Laws is hereby amended by inserting after the words "veratrum viride" in the tenth line, the words: compounds of flourine, so as to read as follows: Section 2. Whoever sells arsenic (arsenious acid), atropia or any of its salts, chloral hydrate, chloroform, cotton root and its fluidextract, corrosive sublimate, cyanide of potassium, Donovan's solution, ergot and its fluidextract, Fowler's solution, laudanum, McMunn's elixir, morphia or any of its salts, oil of pennyroyal, oil of savin, oil of tansy, opium, Paris green, Parson's vermin exterminator, phosphorus, prussic acid, "rough on rats," strychnia or any of its salts, tartar emetic, tincture of aconite, tincture of belladonna, tincture of digitalis, tincture of nux vomica, tincture of veratrum viride, compounds of flourine or carbolic acid, without the written prescription of a physician, shall affix to the bottle, box or wrapper containing the article sold a label of red paper upon which shall be printed in large black letters the name and place of business of the vendor and the words Poison and Antidote, and the label shall also contain the name of an antidote, if any, for the poison sold. He shall also keep a record of the name and quantity of the article sold and of the name and residence of the person or persons to whom it is delivered, which shall be made before the article is delivered, and shall at all times be open to inspection by the officers of the district police and by the police authorities and officers of cities and towns; but no sale of cocaine or its salts shall be made except upon the prescription of a physician. Whoever neglects to affix such a label to such a bottle, box or wrapper before delivery thereof to the purchaser, or whoever neglects to keep or refuses to show to said officers such record, or whoever purchases any of said poisons and gives a false or fictitious name to the vendor, shall be punished by a fine of not more than fifty dollars.

The provisions of this section shall not apply to sales by wholesale dealers or manufacturing chemists to retail dealers, or to a general merchant who sells Paris green, London purple or other arsenical poisons in unbroken packages containing not less than a quarter of a pound, for the sole purpose of destroying potato bugs or other insects upon plants, vines or trees, except that he shall record each sale and label each package sold, as above provided.

Approved March 18, 1912.

RHODE ISLAND.

The Rhode Island pharmacy laws were amended as follows: Carbolic acid is placed in Schedule A. Sales of this article must, therefore, be entered in the poison book. The following lines, relating to narcotics, have been added to Section 15:

"Illegal possession of such drugs shall be deemed evidence of violation."

The law requires that the name of the registered pharmacist shall appear on all poison, prescription and drug labels. Trade names are insufficient.

GEORGIA.

A drug vending bill which prohibits the sale of patent medicines by peddlers and fakirs is up for its third reading, and Secretary C. D. Jordan reports on July 22 that it has every indication of becoming a law.

The following rulings by the state boards of pharmacy the past year are interesting and show that the state boards, acting within certain limits, control the situation almost completely as far as raising the requirements for registration are concerned.

The following ruling by the Kentucky State Board is self-explanatory:

"On account of the growing tendency upon the part of applicants for registration to seek examination before some other State Board upon the imaginary ground of obtaining a milder examination and then becoming registered in Kentucky, by reciprocity the Kentucky Board of Pharmacy, at the meeting held April 12, 1912, adopted the following ruling:

"No resident of this state or of any other state shall be deemed eligible for reciprocal registration in Kentucky upon the examination of the Board of Pharmacy of another state unless said applicant, at the time of taking said examination, shall have been a bona fide resident of said state and engaged in the retail drug business therein for a period of not less than one year immediately prior to said examination."

In New York the Pharmacy Council of the Board of Regents of New York has passed a resolution recommending that the degree of Bachelor of Science in Pharmacy be made customary and that it be granted only after three years of pharmaceutical instruction following a full high school course.

It also recommended that the degree of Doctor of Pharmacy be conferred only after the completion of three years resident work subsequent to the attaining of the degree of Bachelor of Pharmacy. These recommendations become effective in January, 1913.

The Alabama Board now requires all applicants for examination to have their papers in the hands of the Secretary at least five days before the meeting of the board, accompanied with sworn affidavit from parties with whom they have been employed, showing their four years practical experience.

The Missouri board has raised the requirements for assistant pharmacist. The ruling is as follows:

"Beginning July 1, 1912, no one may take the examination in Missouri for assistant pharmacist until they have had one year in high school, or the equivalent of the same. The general average that will be required to pass as an assistant will also be raised to 75 per cent., which is 15 points higher than has been customary in the past."

The Utah board offers a reward of \$350 to any person furnishing evidence for the conviction of any druggist in the state who is found guilty of selling cocaine or morphine illegally. The minimum fine in Utah is \$2000, or two years in the penitentiary, or both.

The Washington State Board of Pharmacy has passed the following resolution, changing the educational requirements:

On and after July 1, 1912, all applicants for examination as registered pharmacists shall submit evidence of having satisfactorily completed one year of college work in a college of pharmacy recognized by the board, and on and after July 1, 1914, the Board shall require evidence of having graduated from a college of pharmacy embracing at least a two-year course and recognized by the Board.

The Board will only recognize the two state schools of pharmacy in Washington, and such other schools or colleges in the country as hold membership in the American Conference of Pharmaceutical Faculties.

Any pharmacist holding full registration papers obtained in another state prior to July 1, 1912, shall be admitted to examination as candidate for registration.

PREREQUISITE LAWS ASKED FOR BY STATE ASSOCIATIONS.

The Iowa State Association adopted unanimously the recommendation of the President, asking for a prerequisite law at the next meeting of the legislature.

The Louisiana State Pharmaceutical Association adopted a recommendation of its Legislative Committee that the graduate prerequisite be approved and that a bill be introduced in the legislature.

The New Jersey Pharmaceutical Association adopted a resolution asking for a prerequisite law. A bill was introduced, but factional differences developed and the bill was tabled.

PHARMACY SCHOOLS.

Owing to incomplete data, statistics of the pharmacy schools for 1912 cannot be given. The following figures for the years 1910 and 1911 may be of interest:

In 1910 we had 79 pharmaceutical schools and in 1911, 78. In 1910 there were registered in all schools 5937 men and 289 women. In 1911, 5867 men and 264 women, showing a decrease of both.

In 1910, 47 students held college degrees and in 1911, 84, showing a decided increase.

It is a well-known fact that some of our best educators are of the opinion that our high schools are too anxious to prepare students for college and lose sight of the fact that only about 5 per cent. are privileged after leaving high school to take up college or university work.

There seems to be no absolute certainty that our colleges and universities are really fulfilling their place in the educational field. Since the above questions are open to debate, the question might well be asked, "How about our pharmacy schools? Are they fully meeting present-day conditions?" The fundamental subjects of chemistry, pharmacy, materia medica certainly should not be neglected, but the changed conditions in pharmacy must, it seems to me, be met by our pharmacy schools if they are to adequately equip the incoming pharmacists for their life work. We must not forget the fact that probably on the average

only about 35 per cent. of the drug business today is strictly professional. This part of the work must be taken care of and calls for the very highest training, a fact often overlooked.

Commercializing of the drug business, the branching out into the many side lines, even including cafeterias, seems to be here to stay. It is a condition that must be met, no matter what our idea may be about ethical pharmacy. The changed commercial conditions require, in a certain respect, educational changes.

The time is past when the successful druggist can ignore such questions as salesmanship, which has become a science, window displays, business etiquette, business correspondence, store service, business economics and advertising. Some of our colleges are already taking advantage of their opportunity by giving instruction in these subjects. It is a logical field of instruction that must not longer be neglected.

The coming year will find many state legislatures in session, and no doubt the usual number of bills of interest to pharmacists will be introduced. Attention is again called to the imperative need of organization. The medical profession has blazed the trail and we can see the results. The old adage, "In union there is strength," was never truer than in legislative matters.

The druggists of any state, if properly organized, can exert enough influence to prevent pernicious legislation, for as a whole they are a highly respected professional class, and if they fail to get a square deal it is due to the fact that they are not alive to their own interests. The only logical solution is through local, county, state and national organization of the druggists.

THE PHARMACOPOEIA AND THE LAW.

H. H. RUSBY.

The vast extent and importance of the material interests controlled by the purely legal aspects of the Pharmacopoeia are realized by but few persons who have not been brought into direct contact with the customs business of the country. Individual shipments of drugs frequently count up into the tens of thousands of dollars in value, and of these extra-large shipments there are frequently a number at one port, in a single day. The question of the admission of these drugs frequently depends upon their conformity with the official requirements. If not in such conformity, the American merchant, in accordance with special conditions in his contract, may often return the goods to the shipper without material loss, but in a great many, if not in most instances, he must lose the greater part, or even the whole of the value of the goods. Think of 10,000 pounds of ergot, at \$1.60 per pound, condemned to rejection, and suffering farther ruin while the case is pending; 20,000 pounds of buchu at upward of a dollar a pound, condemned because of an excess of stem; senna of the same value condemned because it yields 2 or 3 per cent. of ash in excess of the allowance, or a ton of saffron worth \$8.00 a pound because the styles have been plucked a half an inch too long, or 3 or 4 per cent. excess of water has remained in it.

Assuming that the drugs have been admitted into the country, some intentional or accidental change in them may subsequently render them objectionable, under the Pharmacopoeia, in inter-state or intra-state commerce.

If, on the other hand, we consider the view of those interested in the public health, or in the correctness of commercial transactions, we find interests quite as extensive, and far more serious, depending upon the official standards. Not only does this apply to the welfare and safety of the sick, but equally to the standing and reputation of two great professions.

Is not, then, the subject of the legal aspects of the Pharmacopoeia one to demand and command the serious attention of a body so well circumstanced for aiding in their control, as this Association?

It may reasonably be expected, indeed it is unreasonable not to expect, that the legal features of the Pharmacopoeia will be made the most important subject of study by its makers. Yet we find that some of the U. S. P. standards are directly opposed to successful medical practice, and that many of them are based wholly on conjecture or mere legendary belief.

Assuming similar conditions to exist in any other equally important department of human activity, even though such interests were purely financial, what course of procedure should we expect on the part of those responsible? Would there not at once be made an appropriation of men and money, for the purpose of investigation and correction, commensurate with the importance of the subject and the difficulty of the task involved?

That this was not done in the case of the edition of the Pharmacopoeia at present official should call for very mild and incidental criticism.

It would be ungenerous, if not actually unjust, to criticize the present Pharmacopoeia because of its shortcomings as an authority in the interpretation of our pure drug statutes. True, it was compiled for the purpose of establishing standards for the articles recognized, but, there being at that time no Federal or very important State statute based directly upon these standards, the later were prepared with a view to their professional rather than their legal application, and the vast influence for good and evil which was to be wielded, and now is wielded by those standards, had probably occurred to the mind of none.

Now the difference between the legal and the professional application of a standard, while perfectly clear to those who have had abundant experience, is not so clear to all others. If it were, this paper would not be presented. It is because I realize that many of the members of the Committee of Revision have no clear idea of the importance of providing in the present revision work for the legal snags of administration that I have deemed it necessary to induce this body of practical men to formally recommend that the Revision Committee pay particular attention to these requirements in the forthcoming edition.

When professional people are called upon for this class of interpretations, they are supposed to seek out the intent and purpose of the language, and to apply the latter in the interest of such intent and purpose, if possible. When courts are called upon to do the same, the usual method of procedure is such as will yield the largest amount of revenue to the attorneys in the case. It is not meant that this is the court's object at the time of the particular trial, but that a system of legal administration and even of legislation, has grown up, in which this object

of increasing attorneys' fees has, perhaps unconsciously, grown to be the determining influence. In this way, questions of interpretation have come to depend on technical meanings or omissions, often to the end that the plain intent of the writers, known and admitted so to be, is set aside for the (often greatly strained) technical interpretation.

Let us, by way of illustration, consider the subject of senna. We have, first, the title, which is merely "senna." By a common-sense construction, this would be extended to include Alexandria senna and India senna, because these are mentioned in the description. By a narrow construction, these would be excluded, and I have actually known an attorney to argue for such exclusion, in a very similar case. Moreover, the title "Tinnevely senna," though a fully recognized synonym of India senna (professionally and in common sense) would be excluded, unless given in the index of the book. This would be true of all other synonyms. Furthermore, it has been frequently held that the term senna itself would be so excluded, if coupled with a qualifying word to show its condition, as broken, cut, granulated, powdered, in No. 60 powder, etc.

Let us next consider the definition:

"The dried leaflets of *Cassia acutifolia* Delile (Alexandria Senna), or of *Cassia augustifolia* Vahl (India Senna), (Fam. Leguminosae)."

Now, if a 500 lb. bale of senna was sold that contained one pound of stems, stones, seeds, other leaves, or foreign matter of any sort, its sale would be prohibited according to the legal technicality, because this definition refers only to the leaflets. This interpretation is however, in the case of senna, modified by something which follows, and which will be considered further on. Now a judge, professing to be very practical, says that such a interpretation would be absurd, because practically no senna of this description would ever be found in commerce, so that the enforcement of this absolute standard is impracticable. It being thus established, on sound reasoning, that some foreign matter *must* be allowed, reason is at once dethroned to make way for the declaration that, no permissible amount of impurity being specified in the Pharmacopoeia, any amount may be admitted! No professional man, and no acting rationally being, would so rule. But judges are not permitted to officiate rationally. A rational being is one who in seeking a desirable result or end, adapts and employs his means for securing that result. A court is a machine that has been constructed to exalt, in practice, the means (that is, the law) above the end (that is, justice); to fall down and worship at the shrine of the means and to rule that the end is of no consequence when its attainment requires the subordination of the means unto it. It is pointed out to him, that the Department, seeing this necessity, has decided to allow 5 per cent. of such impurity, but he replies that this is legislation and that the Department has no right to read into the law things which are not there. It is thus decided that any amount of adulteration can be permitted with senna, for the specific reason that the Pharmacopoeia forbids any adulteration whatever.

Next follows the description of senna, at the close of which is the statement that senna shall be free from stalks and Argel leaves. Now, our lawyer points to that part of the law which mentions the standards of the Pharmacopoeia and

claims that the only thing in the nature of a standard for senna is this note about stalks and Argel leaves, and claims that, for the reason that this has been placed there, all other impurities are exempted from the ban and that any adulterants other than stalks and Argel leaves are admissible. He strengthens this position by showing that in the foregoing edition the statement read "stalks, Argel leaves and other impurities" and that when the revisors cut off the last three words, they intended to permit all other impurities to be added. The court supports this contention, and the end and purpose of the law are annulled.

How is this case to be met? Obviously by adding to the definition, and not as a foot-note, the words "admixed with not more than 5% of other and non-injurious substances."

Another question arises in this connection, namely, what are "stalks." The lawyer refers to corn-stalks and bean-stalks to show that it means the stem of the plant. He may admit that the leaf-stalks or petioles are included, but denies that the rachis is included. The remedy then is, if any terms at all are employed to use them in their proper technical sense. This is a good answer to the claims so often made that the Pharmacopoeia should be free from technical terms. The only exact terms are technical terms, and that is just what makes them exact.

Based on that part of the law that says "when sold under a name found in the U. S. P.," a host of contentions have been advanced that when the words powdered, cut, broken, etc. are added to a U. S. P. name, the combination so resulting not occurring in the Pharmacopoeia, the article so labelled is exempt from the standard requirements. There is at the present time a hope that this language may be changed by the enactment of the corrected Richardson bill, but we cannot rely upon this hope. The lobby now in Washington is striving to shear the law of even its present restrictive and public protective features, to say nothing of excluding fresh ones. Even if the law is improved, we have many state laws to bear in mind. The only proper course for the Pharmacopoeia is to be complete and accurate and effective in itself, and thus independent of shortcomings in the law.

This defect is easily met by placing a statement in the preface that standards are to be construed as applying to that drug in any state or form that differs only physically or mechanically from the form described.

Various other similar questions regarding modifications of title have arisen. The name Colocynthis is official, as is that of Bitter Apple. Everyone knows that "Colocynthis Apple" means the same, and when a buyer receives a package so labelled, he expects to have colocynthis. Yet a lawyer successfully contends that since this combination does not occur in the Pharmacopoeia, the article sold under it is not subject to the legal requirements. This is a more difficult case to treat, but it would not be amiss for the preface to contain a statement to the effect that when an article is sold under a name or combination not found in the Pharmacopoeia or Formulary, but understood as applying to articles named therein, such articles shall be subject to the same requirements as though sold under official names.

It is specified that the seeds of Colocynthis shall be removed "before using," but the claim is advanced that powdered or ground colocynthis may be sold with the

seeds contained, notwithstanding that this insures its "use" in that condition. Similar conditions exist in case of other drugs, and might be provided for by a statement in the preface that the powdering or grinding of a drug is the first step in its use.

One of the commonest grounds of defense set up for the sale of adulterated drugs is that the law specifies that they are adulterated only when they fail to meet "the tests laid down in the Pharmacopoeia or the Formulary official at the time of the investigation," and that there are no "tests" meaning thereby chemical tests, for the leaves, barks, roots, etc. in question. This is a matter of vital importance in the enforcement of the law and it can be reached only by specifying in the preface that definitions, and descriptions of all kinds are to be construed as tests, within the meaning of the law.

It should also be definitely stated, that a chemical formula following a title is in the nature of a definition of that article.

Some radical action is also necessary to meet that part of the above clause which says "official at the time of the investigation." The preface should contain a clear statement that published supplements are parts of this edition then official, and such supplements, embodying new tests, should be published not less frequently than once a year. It is well known that as soon as the edition is published, adulterators begin to study for new methods which will escape the tests. If they succeed, then under this law, such adulteration must continue unchecked until a new edition is published.

Unless some such course is taken, we are worse off than we should be without the law, for we could then proceed under the general law against fraud, whereas now, the statute becomes an actual means of protection for the offender.

The definitions of the drugs must contain no statement as to the places of production except when it is really intended, for some special reason, to so restrict them. Otherwise, the Federal authorities will be compelled to exclude all lots of that drug that are produced in any other place.

There are many other respects in which definitions and descriptions must be framed in view of special considerations, never before entertained in Pharmacopoeia revision. Are we to retain the requirement that "Ergot" is to be derived from rye and not from wheat or from grasses which grow amidst the rye plants? If so, our description must be framed with such exclusion clearly in mind as an objective. We must also frame this so as to exclude ergot more than a year old, if we are to insist on that condition.

Belladonna leaves may be brown, as may Huanuco Coco leaves, without detriment to their quality; while the same color in *Digitalis* or in *Truxillo Coca* leaves, is to be regarded as a sure indication of serious deterioration.

Jalap may be dried by a degree of artificial heat that leaves a distinct odor of scorching, and even shows a slight superficial charring, without detriment to its medicinal properties, while the slightest odor of scorching in *Elecampane* or *Gentian* means serious damage.

Black pepper is subject to so many forms of adulteration, that its description must be carried out to minute details. Usually, we guard against an excess of starch, but in ground pepper, because of its common adulteration by the addition

of pepper shells, which contain no starch, we should specify that the starch should not be less than a certain amount.

There are, strange to say, cases in which adulteration should be required. Asafoetida, powdered without the addition of something to hold its valuable oil, must first have that oil evaporated off. Hence, an official powdered asafoetida without some such addition, is a practically worthless asafoetida.

Space will not permit the extension of all these principles to the individual articles but it is clear enough that, for the first time in the history of Pharmacopoeia revision, it becomes necessary to study each drug exhaustively in relation to the legal effects of every statement made concerning it.

Since writing the above, the following proposals for the text of the new Pharmacopoeia, and of the acceptance of which there seems to be some danger, have reached me. They violate the principles above enunciated.

Colocynth.

The omission of the word "peeled" from the definition, so that the Federal authorities will hereafter be compelled to prevent the importation of this drug, all of which is peeled.

Condurango.

Wild Cherry.

Viburnum.

No provision for any amount of adhering wood, which is always present, so that trade in these drugs will be prohibited.

Conzallaria.

No provision for the presence of stems or foreign roots, which will exclude this drug from the country.

Hops.

A definition that permits the supply of hops from which the Lupulin has been partly removed.

Flaxseed.

All flaxseed would have to be rejected, because no allowance for foreign seeds, of which there are always some, is made.

Manna.

The wording of the description will exclude more than two-thirds of the manna of good quality. Great embarrassment has been caused the Federal authorities by the present text in this very direction.

Should these errors actually be perpetrated in the printed book, and a corresponding number occur in the treatment of the remaining drugs, it may be predicted that it will seriously cripple the work of administrators of the drug statutes, which would make it unacceptable, and compel a movement in the direction of something workable.

For the above reasons, I move that this section recommended to the revision committees of the Pharmacopoeia and Formulary the following action:

1. That the list of synonyms in the indices be extended to include all that are in common use.

2. That some provision be made, in all cases, for the presence of impurities in drugs, and that this provision be so worded as to make it sufficiently comprehensive.

3. That terms employed be sufficiently technical to leave no doubt as to their exact meaning.

4. That a statement appear in the preface, to the effect that requirements apply to the drug in any form that does not differ otherwise than physically or mechanically from that in which the drug is described.

5. That a drug under a name not found in the book, but which is a modification to the same article as that so named, shall be subject to all the requirements for the drug so understood.

6. That the preface contain a statement to the effect that the definitions and descriptions have the same force in requirements as the chemical and other tests.

7. That a chemical formula, following and applied to a title, is to be regarded as a definition.

8. That supplements containing additional tests, approved by the Committee, shall be published annually, and shall have the same force as the original text.

9. That definitions shall not contain any reference to the place of production, unless it is intended to restrict the drug to such geographical origin.

10. That, in general, the definitions and descriptions, before adoption, shall be carefully studied as to their exclusive effect upon trade in the article to which they apply.

11. That, in case of such drugs as *asafoetida*, which cannot be powdered in the pure state without first driving off an important part of the active constituent, the addition of a specific amount of a specific inert diluent shall be provided for.

THE RAW MATERIAL OF A HAPPY DAY.

Character is the sum of our habits, and they are formed for the most part unconsciously by daily repetitions and without definite plan. Doing what we dislike, the talk of a bore and the effect of "things going wrong" produce a mental state which, when it reaches the point of fatigue, produces a poison which alters the constitution of the blood. The constant recurrence of identical stimuli, i. e., the same thing over and over again, invites a form of fatigue, as when one is constantly associated with an unpleasant personality in the office or elsewhere. All this does not produce any serious result in the brain of the average man provided he has sufficient recuperative powers. In some it produces irritability, and irritability is a bad brick in the foundation of character. Mirth and humor are the antidotes for irritability. It is probable that the popularity of the comic opera and the buffoonery of the vaudeville stage are commercial attempts to supply, artificially, what habitual good humor would do of itself. The proper view to take of those we meet in daily life is to regard them as the raw material out of which we must make a happy day for ourselves, not by walking over them but by mingling with them on friendly terms.—*G. S. Hodgins.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

THE CHAIRMAN'S ADDRESS.

P. HENRY UTECH, PH. G., MEADVILLE, PA.

The word Pharmacy in its original Greek form was applied synonymously to the use of any kind of drug, potion or magical spell, including also poison and the various forms of witchcraft, and doubtless it is a survival of this element of mysticism which many of the laity associate with our profession even at the present day. The term Pharmacy as at present understood to imply a knowledge of the preparation, preservation and compounding of drugs and medicines, came



P. HENRY UTECH, Chairman.

into existence almost simultaneously with the birth of the sixteenth century—A. D. 1597.

That Pharmacy in a somewhat undeveloped state occupied a conspicuous rank from time immemorial is shown by reviewing the pages of history, both sacred and secular. References innumerable reveal the fact that the art, in one form or another, was practiced in antiquity by divers persons under various guises all over the Orient; e. g., under the cognomen of physician-priests, such as the

Egyptian priests of Isis, the art was practiced under special dispensation of some king or ruler, the prescription being accompanied by a series of incantations and spells; the early Israelites, referred to in Exodus, is another familiar instance where the apothecary is commanded to prepare a fragrant ointment for use, etc. China, Arabia, Egypt, India, ancient Rome, Sicily, Greece and other countries of the great interior sea, furnish abundant evidence of the practice of both pharmacy and medicine hundreds of years before the dawn of the Christian era. Another class of these early practitioners associated the practice of the art with that of Astrology under the supposition that all plants, animals and minerals were influenced by the heavenly planets. One of their theories was to the effect that certain flowers grown under a particular planet indicated their employment for all diseases and constitutions supposed to come under the same planet. In very truth, the word recipe which physicians employ when beginning a prescription, is simply a survival of the ancient sign, which originally meant an invocation to Jupiter.

In antiquity, the compounding and preparing of drugs was originally carried on by the early physicians, who likewise formulated their own *materia medica*. Ours is not a new science, nor an original art, and it may interest some of you, therefore, to know that many drugs and medicinal preparations employed before the dawn of Christianity are still in vogue today and are approved in many of our modern Pharmacopoeias. Let me quote you a few passing illustrations: Pythagoras, who lived 6 B. C., was the first to employ Vinegar of Squill, and wrote a whole book on the various properties of the drug. The Chinese practiced the art at a very early period, and distilled Alcohol hundreds of years before any other nation. Noah, of biblical fame, was among the first to engage in wine making. Included in the *materia medica* of Hippocrates are such drugs as Myrrh, Galbanum, Valerian, Garlic, Aconite, Belladonna, the animal drug Castor, and a whole host of others. Later came Dioscorides, who mentioned some 400 drugs in his voluminous works, and to this list Galen, a century later, contributed about 200 more. The Compound Canella Powder—*Hiera Picra*—was first compounded by him, and was only a few decades ago dropped from our official text-book.

The Diachylon Ointment was invented by Menecrates, A. D. 1, and was employed for practically the same purpose as it is today. Would occasion and knowledge permit, this list could be continued in extenso.

But ours is the enlightened twentieth century, and the study and application of modern methods and conditions is perhaps of more material concern. It is a long road from Empiricism to the highly specialized art of pharmacy of today. Science with her magic wand has wrought marvelous changes and transported us into a new realm of *materia medica* and diagnosis, and the problem before us—the chief aim and object for which we as an Association are banded together and assembled here today—is the conscientious application of these newer principles and discoveries to modern pharmacy, to the end that greater economic service and higher efficiency shall obtain for all who are engaged in the practice of the art.

So constant has been this onward march of progress that the era in which we live has wrought a complete revolution both in pharmacy and in the sister pro-

fession of medicine. The simple remedial agents of the vegetable and mineral kingdoms no longer suffice to fulfill the physician's needs, and the whole realm of nature is now called upon to pay homage to the practitioner's art. Such subtle forces as electricity, the atmospheric oxygen, the emanations from radium, certain definite principles from some obscure animal gland or organ, or some newly discovered vegetable ferment—these are but a few of the recent additions to the physician's armamentarium. Included in this newer group also are such agents as remedial sera, bacterial vaccines, opsonins, enzymes both plant and animal, and to this list we may now also include the recently discovered products known as "hormones."

From among this formidable list of remedial agents quite a few deserve special mention at this time. I refer particularly to the various agents of biologic defense, viz., bacterial vaccines, remedial sera and preparations of the various organs of animals. And while we are wont to herald these discoveries as new or original, the fundamental principles underlying these so-called discoveries are recorded by Hippocrates, who in all probability acquired his knowledge from a source even more remote. Although not classed as pharmaceutical products in the modern usage of that term, nevertheless they now occupy a definite place in the domain of preventive medicine, and as such it becomes our duty and business as pharmacists to possess some first-hand knowledge of these peculiar products. The U. S. P. Rev. VIII already includes one of their class, the Serum Antidiphtheriticum, whereas the new Revision will include Vaccine Virus, the Serum of Tetanus, and perhaps others. The chief objection to their official introduction thus far being the difficulty in obtaining sufficiently accurate methods of standarization either of product or process.

SOME MODERN METHODS.

The increased interest in and universal application of biologic knowledge and the importance of absolutely sterile forms of medication, particularly when desired for internal uses, has recently brought into considerable prominence the small sealed glass containers known as Ampuls. Although introduced into France more than thirty years ago, their adoption in this country has only recently been confirmed. They embody an ideal method of preserving, storing and transporting small quantities of medicines which require sterilization before administering.

An innovation noticed the past year is that of several manufacturing pharmacists exploiting galenical preparations of certain potent drugs in original packages, physiologically tested and dated, so as to insure against possible deterioration. No guarantee of permanence is attached to this class of preparations other than the possibility of their being more active therapeutically than the ordinary stock items.

UPLIFTING AGENCIES.

Of the many different influences directly or indirectly affecting the integrity and welfare of our profession, several conspicuous features are particularly noteworthy at this time. *First*, the passage of the Federal Food and Drugs Act several years ago, and the enactment of similar statutes in many of the states

has aroused a new interest in pharmacy with the general public, which has already had a most wholesome effect. New standards of honor for unscrupulous manufacturers of drugs are demanded; new standards of purity and quality—that of compliance with the requirements of our official text-books; and lastly, operating in collaboration with these two agencies—is an awakened public conscience in matters of both food and drugs, the final culmination of which cannot fail to usher in a most promising aspect for the future welfare of our calling. *Second*, the well-directed and practical manner in which the research and investigation is being conducted against the manufacturers of pseudo-scientific pharmaceutical preparations by the Council on Pharmacy and Chemistry of the American Medical Association. The results of their work—that of determining the composition, character, constituents, etc., of pharmaceutical preparations or nostrums—are published in the official journal from time to time, thereby giving undesirable publicity to hundreds of worthless products. Should the American Medical Association now proceed a step further and censor also the many false and misleading statements as to the remedial value of new remedies and proprietaries, it would accomplish a most beneficent mission to pharmacy, to medicine, and to humanity everywhere. *Third*, another significant feature vitally affecting pharmacy is the increased interest and friendly attitude shown our profession by the medical press. It is estimated that there are approximately 100 medical journals published in this country today, and of this number upwards of 30 per cent. are calling the attention of physicians to the merits of the U. S. P. and N. F. preparations. Not a few of these publications are devoting regular departments to Official Preparations.

ANENT COMMERCIALISM.

The cry has gone abroad, and quite frequently of late, that ethical pharmacy is fast losing its wonted prestige, that new “fads,” “isms” and “pathys” have made definite inroads into the domain of both pharmacy and medicine, and that in self defense, other interests have, as a consequence, diverted the pharmacist's calling to that of an ordinary tradesman. Enough data has already been cited to show that our profession is changing—changing in obedience to a fundamental natural law of evolution—not revolution. We have no quarrel with those whose vision is blinded with the myopia of commercialism and are firmly of the conviction that the question in its final analysis must always remain largely one of individual temperament and inclination. To the wide-awake, conscientious pharmacist, in love with his vocation, who is giving to it the best that is possible, who is utilizing to the best of his advantage the tools at his command in the form of intellectual equipment and opportunity, to such a one the world still pays—as it has always paid—large dividends in sterling coin, named security, material prosperity, and an abiding satisfaction in having done well whatever one's hands find to do.

LAXITY AND INDIFFERENCE, THE CAUSE.

Opportunities affording material gain and indirectly tending to elevate the professional side of our art, are constantly being ignored or overlooked by many, who otherwise are capable pharmacists. All will agree that the prescription

counter affords the most profitable source of the pharmacist's revenue. Why so many of our fellow-workers devote so much of their time and effort toward featuring soda water, fake nostrums, and side lines is one of the anomalies of our calling. It adds nothing to your prestige and little to your purse to be known in your community as a "soda water store." On the other hand, if the prescription department were given more thought and consideration, greater demonstration made of your ability and capability as a pharmacist, new methods, new remedies or preparations exploited from time to time to the prescriber, much of this lost prestige could be regained. In short, reverse the existing order and take the physician into your pharmaceutical confidence, so to speak. Show him the therapeutic advantages of administering certain drugs or medicaments in galenical form as against ready-made tablets; explain to him any new ideas you may employ in the way of compounding or dispensing his medicines; suggest improved formula or improved form of medication, all of which methods are perfectly ethical and legitimate. When one pauses to consider the inadequate amount of instruction our medical brethren receive in pharmacy and materia medica—not more than 120 hours in the curricula of our best schools—we may imagine the avidity with which this information is sought for and digested. Experience has proven that physicians invariably appreciate these little proffered courtesies.

MODEL PHARMACISTS.

The question of the certification of pharmacists, suggested by former Chairman Otto Raubenheimer several years ago, is still being agitated in some quarters. A committee of pharmacists—members of this Association—are to confer with a similar committee of physicians in New York City next month to discuss the matter. Doubtless we all would welcome the introduction of some such process of eliminating the morally and socially unfit from our rank and file, but the probability of such an ideal condition in pharmacy, in our humble judgment, seems rather premature. The pharmacists of the metropolitan city deserve our hearty approval for taking the initiative in this direction.

SOME SIMPLE SUGGESTIONS.

Taking then, a broad view of the present day aspect of pharmacy, it will be noted that there is a general upward tendency—one of improvement rather than of decline. To adapt ourselves then, as a profession, to the rapidly changing order is the problem. And while we realize that the status of the pharmacist—both moral and professional—is not quite what we would like to see, may I enumerate a few suggestive means and measures in the hope that they may inspire some of our fellow-workers to higher ideals and a nobler conception of the worthy profession of pharmacy.

1. Put character and personality in all your work. They are the two chief assets of a successful career, no matter whether pharmacist, physician, ploughman or president.
2. Study your physicians' needs and hobbies.
3. Study new drugs, new remedies and incompatibilities.

4. Be a specialist in drugs and prescriptions and emphasize the fact to the medical profession and the laity as well.

5. Study the official preparations—both U. S. P. and N. F. Try and suggest improved formula for present or any new preparation. The new Year Book now affords a fine outlet for all such original work.

6. Make all the preparations and chemicals you can. It is more economical and the experience is invaluable. There can be no better nor purer drug than U. S. P. and N. F.

7. Make your prescription counter a model of neatness and order, as nowhere else is the character of the store so apparent to the physician. Let neatness and accuracy characterize all your work.

8. Read the drug journals and afterwards bind them at small cost for reference. To a practical pharmacist, reference works are as indispensable as mortar and pestle.

9. Be ethical—which simply means honesty in practice in all your dealings with the public.

And finally, take inspiration occasionally from the maxim of Franklin: "Keep thy shop, and thy shop will keep thee."

In concluding this discursive address, I desire at this time to extend my sincere thanks to the Association which has so signally honored me with this important office, to my associates for their kindly assistance, to the numerous contributors to this year's work, and to the unselfish company of men who are directing pharmacy's onward march of progress—the Council of the American Pharmaceutical Association.

PHARMACY IN ITS HIGHER DEVELOPMENT.

FRED L. LACKENBACH, EDITOR DEPT. OF PHARMACY AND CHEMISTRY, CALIFORNIA
STATE JOURNAL OF MEDICINE.

This paper deals with the subject of BIOLOGICS. It is not intended as a technical treatise but is rather designed for the commercial pharmacist—the man who handles these products for revenue—and to whose interest it is that he become conversant with the various products, mode of preparation, uses, and their proper preservation.

In the United States biological products are generally produced by the large pharmaceutical houses operating special laboratories under Government license. They are marketed through the medium of the drug trade which is the legitimate channel for their distribution. The average pharmacist however fails to appreciate the intimate relationship between these advanced therapeutic agents and those which have heretofore occupied his active attention and as a consequence is neglectful of an opportunity to materially advance his professional status. In-

deed, the intelligent handling of these products offers an exceptional opportunity to the pharmacist to elevate his calling to a higher plane.

In this field he need not fear the department store, nor the mail-order house, nor the professional price-cutter, for these products cannot appeal to the laity to be employed in self-medication.

Nor do these products appeal to the unprogressive and slothful physician. Their effective application is founded upon accurate clinical and bacteriological diagnosis. How many of your medical friends possess microscopes and are able to differentiate the various pathogenic (disease-breeding) organisms?

The alert physician is quick to perceive the advantages of a scientific and specific therapy that draws the populace away from the evils of self-drugging. He is also able to estimate the value of keeping his patients under close observation and the psychical effect of a cleansed skin and a needle puncture.

Then each individual is "a law unto himself." *A teaspoonful three times a day after meals* is a useless slogan when it comes to the administration of biologics. The indications, dosage and mode of administration are largely matters of individual observation and personal idiosyncrasy. There is no known means by which an individual's resistance or recuperative power may be gauged beforehand, and when a substance is introduced direct into the circulation there is not an ever-watchful and long-suffering stomach to stand guard over the vital organs. So one must needs be careful. There is no such thing as drawing hard and fast rules in the administration of these products. A physician before administering the second dose must know as accurately as possible, the beneficial or untoward effects of the first. This necessitates his having clinical experience and some knowledge of laboratory diagnostic measures.

Therefore, since so much is dependent upon the administration of these products, it is readily apparent how important are these products themselves. It is the pharmacist's business that these products be handled with a care bordering upon reverence and when he has grasped some of the fundamentals governing their production, he will so handle them.

The science of bacteriology is the basis upon which biologics production rests. Their actual production however, is dependent upon the application of processes that are distinctly pharmaceutical. There is scarcely a pharmaceutical process one can mention that has not its application in the biological laboratory.

Maceration, filtration, digestion, distillation, evaporation, sterilization, desiccation, levigation, dialysis, precipitation, and physiological assay are some of the processes that occur to the writer offhand. These are common pharmaceutical procedures in the biological laboratory. The fact that more refined methods are employed such as vacuum evaporation and filtration, filtration through porcelain, steam and dry-air sterilization, centrifugalization, and other methods requiring special apparatus, does not alter the fact that the processes are essentially pharmaceutical.

Another striking parallel is found in the finished product. *Pills*—veterinary Blackleg Vaccine in pill form; *Triturations*—Blackleg Vaccine in the form of accurately divided powders; *Tablets*—Calmette's Tuberculin Ophthalmic Test tablets and the Bacterial Vaccines and Tuberculins in tablet form. *Capsules*—Moro's Tuberculin Ointment, which appears also in collapsible tubes. This also

is a true *Ointment* composed of 50% Koch's Old Tuberculin incorporated with Lanolin. Then there are *Mixtures*—the Bacterial Vaccines; *Emulsions*—Tuberculin Bacillen Emulsion, which is more properly a suspension; and *Extracts*—which instead of containing the soluble elements extracted from vegetable drugs, contain substances evolved by bacteria in their growth in artificial culture media. And it might here be added that from their physiological effects there would seem to be an intimate chemical relationship between certain bacterial toxins and some very poisonous vegetable principles—as *ricin* and *abrin*.

Bacteriology, is a science which should have a place in the curriculum of every college of pharmacy. Problems of sterilization, fermentation, and the role of bacteria in disease, might well demand the pharmacist's careful consideration.

It was not until the 8th Revision of the United States Pharmacopœia that this class of products came into official recognition.

Antidiphtheric Serum is the pioneer in this respect. Tetanus Antitoxin and Vaccine Virus have been accepted for inclusion in the next—the 9th Revision of the U. S. P. In the past decade these products have multiplied to an astonishing extent. Millions of dollars are now invested in their production and dispensing pharmacists have even taken to specializing in their production in this field.

In describing the various products found upon the market this paper will deal first with those products official, or about to become official in the U. S. P. Second; those products which have been passed by the Council on Pharmacy and Chemistry of the American Medical Association and included in *NEW AND NON-OFFICIAL REMEDIES*, 1912, and lastly those products which are of more recent origin and which for some reason are not officially recognized. Following a description of these products the writer will compare the different classes of bacterial derivatives.

Serum Antidiphthericum—Diphtheria Antitoxin is official in the 8th Revision of the U. S. P. It is described as "a fluid separated from the coagulated blood of a horse immunized through the inoculation of diphtheric toxin." It is recognized also in the French, German and Spanish Pharmacopœias. It is marketed in the forms of *Serum*, *Globulin* or *Concentrated*, and *Globulins*, *Dry*. The *Serum* only is official.

The process of preparing diphtheria antitoxin is characteristic of the preparation of serums in general so will be dealt with in detail.

The initial process is the securing of a pure culture of diphtheria bacilli from a throat infected with the disease. A pledget of sterilized cotton mounted on a swab is applied to the diseased tissue and then smeared on a slant of Loeffler's blood-serum media contained in a test tube. This is placed in an incubator kept at the body temperature for twelve or more hours when numerous, roundish, pin-point colonies will have formed upon the surface. Among these will be found pure cultures of the Klebs-Loeffler diphtheria bacillus. From these pure cultures other tubes are planted which serve to inoculate large flasks of specially prepared bouillon. The flasks are then placed in an incubator where in the course of five or seven days countless millions of diphtheria germs are grown, giving rise to large quantities of virulent diphtheria toxin. This toxin is an exceedingly toxic substance and is principally responsible for the destructive effects of the diph-

theria disease. Trikresol is then added to the contents of the flasks to kill the germs and the product is then filtered through a Berkefeld—an unglazed porcelain—filter, filtration being facilitated by the employment of vacuum pressure.

The filtrate freed from germs contains the soluble products elaborated by the growing and multiplying germs and is known as *diphtheria toxin*. This toxin is standardized by inoculating guinea pigs of 250 grams weight with graduated quantities of toxin. The smallest quantity proving fatal to the guinea pig within a period of four days is called the minimum lethal dose and this is employed as a basis for inoculating the larger animals.

Now comes the production of the antitoxic serum. Perfectly sound horses are injected subcutaneously with gradually increasing quantities of the toxin, beginning with one or more lethal guinea pig doses and increasing, as the animal acquires immunity to the toxin, to perhaps a hundred thousand times that quantity—in volume approximately 0.1 cc. to 250.0 or 500.0 cc. of the toxin. The injections are given at intervals of a few days and continue over several months—until the animal's maximum immunity is reached. As the animal develops immunity to the toxin, *antitoxin* is formed. This antitoxin is a reaction product of the living organism. The body cells are attacked by the poison, and if not destroyed, are stimulated into the over-production of *antibodies* capable of combining with and neutralizing the poison:—*Ehrlich*.

The horse is allowed to rest for a week or two during which a preliminary test is made of the antitoxic strength of his blood serum. If this comes up to requirements the animal is bled by passing a canula attached to a sterilized rubber tube, into the external jugular vein. From five to ten liters of blood is drawn off into sterile parchment-covered jars or test tubes which are set aside to allow the separation of the serum from the clot. The supernatant fluid is then siphoned off and to it is added 0.4% trikresol as a preservative. The product then filtered constitutes the *Diphtheria Antitoxin* of the market.

The physiological activity of Antitoxin is determined by the number of immunity units contained in each cc. This may vary from 200 units in poor serum to upwards of 1500 units in highgrade serum. The *unit* is the measure of *antitoxic power*—not of weight or volume. It is an arbitrary quantity based upon physiological test—the neutralization of toxin by antitoxin in the body of the guinea pig—which animal is highly susceptible to the diphtheria bacillus and its poisons.

Under the Act of Congress approved July 1, 1902, all Diphtheria Antitoxin sold in the United States is required to conform to the standard established by the U. S. Public Health and Marine Hospital Service. This standard is based on the Ehrlich Immunity Unit preserved at the Royal Institute for Experimental Therapy at Frankfort-on-the-Main. Antitoxins of foreign production are standardized and sealed in government laboratories before they are marketed, but in the United States antitoxins are tested in comparison with the Government standard unit in the laboratory of each individual producer. This standard unit is prepared and preserved with the most exacting care at the Hygienic Laboratory, Washington, D. C.

At intervals of two months about 10 cc. of the standard unit serum is distributed to each of the licensed manufacturers. This is a glycerin solution of

dried antitoxin and properly diluted contains one antitoxic unit in each cc. This standard antitoxic unit is used to standardize a laboratory test toxin which determines that amount (approximately 100 fatal guinea pig doses) which just equals or neutralizes the unit when the two are mixed together and injected into a 250 gm. (standard weight) guinea pig, the life or death of the guinea pig within a period of four days serving as indicator. The strength of all unknown antitoxins is tested against this standardized test toxin.

Thus it is seen that the process of testing antitoxin may be compared with an estimation in volumetric analysis, but instead of a chemical this is a physiological test. The body of the guinea pig is the container in which the titration is made, its life functions are the indicator, and its life or death the end reaction.

Globulin Antitoxin—Antidiphtheric Globulins or Concentrated Antitoxin—represents in a concentrated form the antitoxic elements of the natural serum. The Gibson method for extracting the globulins from the serum is most commonly employed. It is briefly as follows. (It will be observed that starting with the serum above described, the preparation of globulin antitoxin is entirely a chemical and pharmaceutical process.)

A quantity of antitoxic serum is added to an equal volume of a saturated solution of ammonium sulphate. A heavy, flocculent, waxy precipitate of the serum globulins results which is separated from the serum-albumin, nucleo-proteids and other inert substances by filtration. The precipitate, containing most of the antitoxin of the serum, is added to a saturated solution of sodium chloride in which the antitoxic—or pseudo-globulin, goes into solution leaving behind the insoluble cuglobulins. These are separated by filtration, the filtrate containing an antitoxin of the serum taken. The antitoxic globulin is then precipitated from the salt solution by the addition of acetic acid. The resulting heavy, flocculent precipitate is separated by filtration and dried between layers of absorbent filter paper. The white, waxy mass is then placed in a bag of dialyzing parchment and dialyzed in running water for several days during which the mass gradually liquefies to a fluid resembling the original serum. This is neutralized with sodium hydroxide and the dialysis continued until it is freed from all adhering salts, etc.

This fluid is from one-half to one-third less the original volume of the serum, and contains most of the antitoxin originally contained. Sodium chloride then restores the normal salt content and a preservative is added. Finally, the globulin antitoxin is filtered through paper, then through a Berkefeld filter, and tested in the same manner as is the U. S. P. antitoxin.

lin Antotoxin which is intended for the extemporaneous preparation of the fluid

This product still further concentrated and dried *in vacuo*, is the *Dried Globulin Antitoxin* by dissolving the substance in sterile, distilled water.

Tetanus Antitoxin is proposed for inclusion in the 9th Revision of the U. S. P. It is official as *Serum Antitetanicum* in the Belgian, French and Swiss Pharmacopœias. Both liquid and desiccated preparations are recognized by the French Pharmacopœia. Like Diphtheria Antitoxin, it occurs on the market in the Serum, Globulin, and Dried forms.

Tetanus Antitoxin is described as—the blood serum of horses immunized to the toxin of the tetanus bacillus.

The antitetanic serum sold in interstate commerce in the United States should conform to the standard established by the U. S. Public Health and Marine-Hospital Service. This standard is defined as follows—"The immunity unit for measuring the strength of tetanus antitoxin shall be ten times the least quantity of antitetanic serum necessary to save the life of a 350-gram guinea pig for ninety-six hours against the official test dose of a standard toxin furnished by the Hygienic Laboratory of the Public Health and Marine-Hospital Service."

Antitetanic Serum Dried is employed as a dusting powder in the treatment of infected wounds.

The two serums described above are classified as *antitoxic sera*. Another group embracing a considerable number of products are the *anti-bacterial sera*. In the preparation of these, instead of employing the bacterial *toxins* in inoculating the animals, the respective bacteria themselves are employed in the forms of virulent, attenuated or killed cultures. These serums are directed against the bacteria present in the disease, rather than against the neutralization of their toxins. A brief summary follows. (See NEW AND NONOFFICIAL REMEDIES 1912.)

Anti-streptococcus Serum is official in the French Pharmacopeia. It is prepared by immunizing horses with virulent cultures of streptococci.

Anti-dysenteric Serum is the blood serum of horses immunized against the Shiga bacillus.

Anti-gonococcic Serum is prepared from the blood of rams immunized against both dead and living cultures of virulent gonococci.

Anti-meningococcic Serum is the blood serum of horses immunized against the meningococcus of Weichselbaum (*Diplococcus intracellularis*.)

Anti-pneumococcus Serum is the blood serum of horses immunized against pneumococci.

Anti-staphylococcus Serum is prepared from the blood of horses immunized against staphylococci.

Anti-tubercle Serum is prepared by treating horses for several months with the toxic products of the tubercle germs.

Anti-typhoid Serum is a serum obtained from horses which have been injected with killed cultures of bacillus typhosus.

Normal Horse Serum is obtained from normal animals as distinguished from that obtained from horses undergoing the process of immunization for the process of immunization for the production of curative sera. It is employed to check hemorrhage and acts by increasing the coagulative power of the blood. Normal serum from other animals has also been employed for this purpose.

Two very interesting examples of serums obtained by inoculating animals with substances not of bacterial origin are seen in Hay Fever Serum and Snake Bite Serum.

Hay Fever Serum (Pollantin) Dunbar's Serum—is obtained from the blood serum of horses which have been immunized with pollen toxin. It is therefore an antitoxic serum corresponding to the toxins or poisonous proteids obtained

from ragweed and plants of the *Gramineae*. It is employed as a local application to counteract the effects of pollen toxin in Hay Fever.

Scrum Antivenereum.—Antivenomous serum is obtained from horses immunized against the venom of snakes. It is employed against the poison of venomous reptiles as the viper, rattlesnake, etc.

Of the VIRUSES there are two of immediate interest to the pharmacist—*Vaccine Virus* and *Antirabic Vaccine*. The former is proposed for inclusion in the U. S. P. 9th Revision.

Vaccine Virus.—Smallpox Vaccine is perhaps the oldest and most extensively employed of this class of products. It is the material obtained from the skin eruptions of calves affected with vaccinia-cowpox, and is employed for the vaccination of human beings against smallpox. The organism which presumably gives rise to this disease has not been isolated, which fact necessitates the employment of the material (or virus) as an immunising agent.

In the preparation of Vaccine Virus, the process of vaccinating or inoculating the calf and the subsequent curettage of the vesicles in the gathering of the lymph, is essentially a surgical procedure. The grinding of the "pulp," its incorporation with glycerin and the manipulations leading up to the finished product, are pharmaceutical processes, though exception may perhaps be taken to the bacteriological methods employed to determine the presence of contaminating organisms or chemical poisons.

Antirabic Vaccine is an emulsion of the cords of rabbits that have died as a result of the subdural injection of fixed rabies virus. The fixed virus is obtained by the passage of rabies virus through a long series of rabbits until the animals die after a uniform period of incubation. The cords are removed from the rabbits and dried over potassium hydroxide for a period of from two to fifteen days. The fixed virus in general use is of the strain employed by the U. S. Hygienic Laboratory, Washington, D. C.

As prepared for administration, each section of cord of the requisite attenuation is ground up with glycerin and salt solution into an "emulsion," the cords of gradually increasing virulence injected subcutaneously into the infected subject as a prophylactic against rabies. The object is to gradually produce an immunity to the rabies virus before the "street virus" takes effect.

Another important class of biological products are the *Bacterial Vaccines* or *Bacterins*. These are suspensions of killed pathogenic bacteria in physiologic salt solution to which phenol or trikresol has been added as a preservative. They are standardized to represent an approximate number of bacteria to the cubic centimeter.

The Bacterial Vaccines may be "stock" vaccines, or "autogenous" vaccines. Stock vaccines may be "specific"—composed of one organism only—or, "mixed" or "polyvalent" which are vaccines representing different strains of one organism, or strains of a number of different organisms.

Autogenous vaccines are prepared from the organisms giving rise to an infection in an individual case, and are employed in that case only. The preparation of such vaccines sometimes becomes necessary because of the peculiar nature of an infection. Pharmacists do not often have occasion to handle this special

work. The stock vaccines are designed to cover a broad range by embracing in their composition as many diverse strains of the organisms represented, as possible.

The bacterial vaccines or bacterins comprise a very large class of biological products. They are composed of one species of organism only, or two or more organisms, the name of the product designating its composition. Thus—Acne Vaccine is a suspension of the *Bacillus acnes*. Staph-Acne Vaccine contains in addition to the *Bacillus acnes*, various strains of *Staphylococcus*; etc.

One product of this group—*Typhoid Vaccine* has come into very extensive use as a prophylactic measure against typhoid fever. Its use is now compulsory in the U. S. Army and Navy, and has become a routine measure in several European military organizations. Its use has practically eliminated typhoid fever from the military camps.

The most recent development in this field is a new class of bacterial derivatives termed *phylacogens*. These are distinct from the Bacterial Vaccines in that they contain none of the bacterial cell substance. They are sterile aqueous solutions of the metabolic substances or derivatives generated by bacteria grown on artificial culture media. The bacteria, first killed, are removed by filtration through porcelain. A considerable variety of pathogenic bacteria are employed in their preparation, the different organisms being present in about equal proportions. A basic phylacogen is first prepared and is known as *Mixed Infection Phylacogen*. The specific phylacogens are prepared by adding to this basic material an equal proportion of the filtrate obtained by growing and treating the organism considered to be predominant in the pathological condition. For example; in the preparation of *Rheumatism Phylacogen*, a strain of *Streptococcus*—*Micrococcus rheumaticus*—is grown and treated like the several organisms entering in from this product added to the Mixed Infection Phylacogen. There are also marketed Gonorrhea Phylacogen and Erysipelas Phylacogen.

Another group embracing some four-score of products are the *Tuberculins*. These are employed in the diagnosis and treatment of tuberculosis. Some of these products are employed very extensively. They will be treated upon in another paper.

There are also the various tests for syphilis, typhoid fever, and cholera, and the various products for veterinary use which time and space do not permit the writer to enumerate.

There are however three distinct classes of biologic products—Serums; those products derived from the blood of animals. Viruses; those products in which the infective material itself is employed; and the Bacterial Vaccines, which contain the dead organisms in suspension.

In closing, the writer will quote from NEW AND NONOFFICIAL REMEDIES 1912; published by the AMERICAN MEDICAL ASSOCIATION.

"The vaccines, viruses and serums constitute one of the most important groups of drugs with which the physician has to deal. Some preparations of this group are specific cures for certain diseases; others are invaluable in prophylaxis and diagnosis. The great importance of exercising some degree of governmental control over these products was recognized by the passage by Congress in 1902,

of a law entitled "An Act to Regulate the Sale of Viruses, Serums, Toxins and Analogous Products in the District of Columbia, to Regulate Interstate Traffic in Said Articles, and for Other Purposes." The law provides for the licensing of U. S. Public Health and Marine Hospital Service to have an inspection made of its necessary for an establishment desiring it to request the Surgeon-General of the U. S. Public Health & Marine Hospital Service to have an inspection made of its laboratories, methods, products, etc. This inspection is made by an officer of that service, and consists in a careful examination of the stables, laboratory, facilities, methods, animals, collection of the serum, standardization, and tests for potency, purity, and amount of preservative employed. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the P. H. and M. H. Service. The inspection of the laboratories is repeated at least once a year and if unsanitary conditions are found, or if the products are not what they are claimed, the license is suspended.'

908 Butler Building, San Francisco, Cal.

DESTRUCTION OF FLIES BY FORMALDEHYDE.

A very conclusive test of the efficacy of formaldehyde is claimed to have been made by a writer in the Economic Entomology, according to a report in the Veterinary Record. The mixture used was one of formalin, 1 oz.; milk, 8 oz.; water, 8 oz., and was used by placing it in shallow plates with a piece of bread in the middle of each plate. Six plates of the mixture were placed in the passage-way between the stalls in a large calf barn. This passage-way was about six feet wide and thirty feet long. The mixture was exposed at 12 o'clock noon and left until 8 o'clock the next morning. The dead flies when swept up measured three quarts, and half as many had died in the stall on each side. Between forty and fifty thousand flies were killed in twenty hours by this experiment.—*Pharmaceutical Journal and Pharmacist*.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

THE CHAIRMAN'S ADDRESS.

ERNEST BERGER, TAMPA, FLA.

Our By-Laws provide that the Chairman of each Section shall prepare a *short* address, treating upon subjects connected with his Section. Therefore, in order to give ample time for reading of papers and for their deliberation and discussion, I have lived up to the "letter of the law" and have made my address *short*.

During my term of office I have arrived at a full realization of the beneficent results which the Commercial Section can produce for the commercial interests of our members and druggists throughout the United States, and I trust that all possible facilities be given this important Section.

A resume of the commercial activities in pharmacy during the past year would at this time only be a repetition of what you have already read in our several pharmaceutical journals. Unquestionably, no branch of pharmaceutical endeavor has made greater strides or kept abreast of the times more than our pharmaceutical journals, and worthy of special mention is our own JOURNAL and N. A. R. D. Notes. The value of the information our drug journals disseminate is, in my opinion, not as highly appreciated as it should be. We do not read nor gain the benefits we should from them.

I am glad to advise that we have secured some results through cooperation with State Associations by suggesting a subject to be discussed by them, as per Chapter 10, Article 3, of our By-Laws, and feel that great good can be accomplished by closer cooperation with these bodies, and suggest that steps be taken at this time looking toward this end.

Our sister Association, the N. A. R. D., has done great work during the past year and it is a pleasure to see the splendid feeling which exists between our two great national progressive and prosperous organizations. No opportunity should be lost to cooperate with the N. A. R. D. in matters of mutual interest and advantage to druggists throughout the country.

General business conditions during the past year have been very satisfactory and there is no question but that the commercial side of pharmacy has been extended very materially. New lines of goods have been added, more aggressive advertising campaigns have been inaugurated, and the propaganda movement which materially augments our profits has progressed.

Commercial cooperation among druggists has made splendid progress during the past year. One new cooperative company has grown to national proportions in this short time, having stockholders in every state in the Union, and are doing a splendid and growing business. This possibility is the strongest evidence of the increasing cooperative spirit among us; nevertheless, there is still room for

great improvement. I am reliably informed that only one out of every five members or stockholders in one of our national cooperative organizations cooperate by purchasing the goods which the company has to offer at a substantial saving. I find that the principal trouble is the fallacy "to wait for the salesman." Our day's work is made up of many duties, we deal in many small items and our hours are long, therefore the jolly salesman, with a good story on tap and a willingness to write down and mail in our order is a welcome and looked for visitor. Don't do away with him; it will be many a day before we can get along without him, but by all means let's protect our own interest by keeping our stocks replenished with goods on which we make more than a living profit and which are manufactured by enterprises in which we have some of our money invested, by using a two-cent stamp to mail in our order instead of waiting for a \$300 per month salesman (salary and expenses), thereby saving our profits and dividends. High cost of living, small profits, department store competition and cut prices can all be best combatted with by cooperation. However, in order to secure the full benefits we must all realize that it requires active, continual, substantial and enthusiastic cooperation. The half-hearted stockholder in a cooperative concern who counts on the next man to send in his orders, make window displays and introduce and push the goods, is a drawback instead of a benefit to his company and to himself. The very nature of a cooperative enterprise demands and requires for its success, and in fact its existence, the "operating together to one end" (cooperation) of its stockholders.

This Section can do nothing more commendable than to continue to encourage, assist and foster commercial co-operation among druggists. Honestly conducted and efficiently managed ones are a proven success, and will prove more profitable and beneficial as time passes.

I strongly urge that the scope of the Commercial Section be increased and a reasonable fund be set aside from the general fund of our Association for that purpose. The N. A. R. D. expends \$70,000 annually for the improvement of commercial pharmacy. How can we expect to accomplish anything without funds?

As stated in the beginning, I feel that there are great possibilities for results from well directed efforts by the Commercial Section and I strongly suggest that you deliberate wisely and select only a chairman and associates on this important Committee who have the time and facilities to give the work the attention it merits, and furthermore, who will agree to do so. We have never accomplished one-half we desired to, nor can we ever hope to accomplish as much as we would like during the sessions of this section. However, a live, wide-awake Committee, who are willing to sacrifice the time necessary and who will work during the interim of the meetings and gather information and statistics, will be in position to accomplish valuable results.

In conclusion, let me urge upon you the necessity of bringing our Section into line with the commercial progress which the drug business has made. We are following, when in fact we should be leading, and until we do we will gain only a small percentage of members from the ranks of business druggists, who, of course, are in the majority, and who are so desirable, in order to improve and increase the great work the American Pharmaceutical Association is doing.

THE JOURNAL OF THE
THE PERSONAL ELEMENT IN ADVERTISING.

JOHN R. THOMPSON, PITTSBURGH, PA.

A member of your Commercial Section asked me to write a paper for his Section. I told him I would if he would assign me a subject. This he promptly did, and it was something about advertising.

"Can retail drug stores compete with big stores in the advertising field" I think was his suggestion. I pondered the subject for many days. One day the answer was "Yes," but the next day it would be "No" just as emphatically, so I finally gave it up and came to the conclusion that the right answer was twins.

The answer is yes, because some retail druggists compete very successfully with the big stores in the advertising field, and the answer is no, because many druggists have tried this sort of competition and failed to make good.

For a druggist located in the suburb of a city to use the daily papers is, of course, out of the question, for he would be compelled to publish his advertisements in a circulation that covers a large community and he could hope to reach only a small proportion of this community. If he is located where a majority of the readers may conveniently reach him, then there is no reason why he could not successfully bid for the business.

The druggist in a small town or in a local neighborhood cannot employ the same methods, either in advertising or conducting his business, as do the large stores, any more than the owner of one or two tenement houses may supply light and heat and janitor service as offered by the large apartment house owner. The methods of the large store are not the methods of the small one, but there are many good ways of advertising a small store that may be just as successful in proportion as those used by the large competitors.

It is up to the druggist to find out how he can advertise. I tried many methods before I finally struck my gait, and the plan I used might not work out under other circumstances. I published circulars describing my specialties in more or less glowing language; I got out price lists and talks on prescriptions. Sometimes my friends would tell me my efforts were good advertising, but I never could see that they produced results in the way of mere business. After several years of effort in the field I one day wrote an ad for my little four-page store paper which opened up like this: "This little paper is sent out to tell the people about my drug store." That was the only inspiration I think I ever had. It wasn't much, but I used it for all it was worth. Here is the way I reasoned to myself: Now, folks will say, "You say you are going to tell us about your drug store; now go to it." And I did go to it. I began to use the personal pronoun and talk in my advertisements just as I talked to people over my counter. There is nothing in the world more interesting than personal experience. People would rather hear you talk about yourself than anything else—if you tell the truth. They will read your advertisements about your business—your business—not the drug business in glittering generality—but your business—if you give it to them straight and tell the truth. From the time I began to really and truly "tell about my drug store," I could count results in cash. There are thousands of interesting things

about the goods in a drug store, and the story of the druggist himself, when told on the printed page or by word of mouth, will be absorbed with avidity, provided always that it is the druggist's own story.

There was a book published recetly by Mary Antin called "The Promised Land." The book contains no romance, no history, no tragedy. It is the simple story of Mary Antin, and it is all true. You will read every line of it and read lots of it twice, simply because it is the true story of a human being. Put yourself into your ads and they will bring results; the more you tell about yourself, the more people will like you.

Every druggist can advertise. Not necessarily like some other fellow does it. He must do some experimental work and find out where he is strong. It may be window displays. There is surely room at the top in that field. It may be at the soda fountain. There are plenty of chances for improving soda fountain drinks and methods. It may be in the keeping of a neat store, and here, too, there is much chance for betterment.

It may be in the publishing of a small periodical, as in my own case. My paper never contained any article that will be quoted in the encyclopedia; it was not a brilliant example of grammatical excellence; but it was a good advertisement for my drug store, because it was ME from beginning to end, and I was a good druggist—that point, of course, was always kept to the fore. I was no better, understand, than many others right around me, but I got more business than they did because I kept telling the people what a good druggist I was.

Many druggists say they cannot write an ad. Any druggist can write a better ad himself than any one else can write for him.

Put this in your pipe and smoke it: If you have a drug store that is worth patronizing, you CAN tell the people around you about it if you want to—and want to hard enough.

A STRONG OBJECTION TO A PHARMACEUTICAL CAREER.

As the educational requirements for the future pharmacists increase it will, no doubt, have a tendency to decrease the number of desirable candidates if the present long hours and comparatively small compensation continue. One of the greatest objections, bright, live young men choosing a career, and with the time and money necessary for a pharmaceutical education, could have against pharmacy would be the long hours and Sunday work. By eliminating, or at least minimizing the Sunday hours, one of the strongest objections to many of entering the calling is overcome.

Therefore, it is fair to assume with the shorter hours and Sunday rest, which in all other callings obtain, you attract a higher mental grade of men and they will be more physically fit to serve the public as pharmacists.—*J. H. Webster in N. A. R. D. Note.*

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

THE HISTORY OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

FIRST DECADE 1852-1861.

WILLIAM C. ALPERS.

The art and science of pharmacy in the United States is so closely interwoven and connected with the American Pharmaceutical Association, that the history of the latter might also be called the history of pharmacy in this country. It is true, there have been some prominent pharmacists, commercial and scientific, who were not members of this national association. There also are other associations that have done good and noble work for the advancement of the profession. But this work has all been more or less local, and the inspiration that caused it can generally be traced back to the one great source, the American Pharmaceutical Association, and it may justly be said that whatever was broad and grand in its conception, right in its execution, and beneficial in its results, came from the one center, and the inspiration that spread from here can be felt today in every hamlet of the United States where a pharmacy exists.

In the years before the founding of the Association, there was scarcely any pharmaceutical work in this country worth mentioning. Here and there a man might have gained prominence as a pharmacist, but there was no concerted action, there were no higher aims, and if any association or combination of men was formed temporarily, it was solely for commercial purposes. This is not to be wondered at, for after the great struggle of the Revolutionary War, a time had to come where the thought of political development overshadowed everything else, where the efforts of every man were directed to extend and strengthen the new country, where new and broad fields of activity arose where practical, live industry demanded every minute of time, and one was hardly disposed to soar upward from the daily, necessary, practical work.

ORGANIZATION OF THE A. PH. A.

It was in the middle of the last century that a new era began in many branches and it is a most remarkable fact that in pharmacy, in the same year, two classes of citizens recognized the necessity of a higher and nobler field of activity in order to strengthen their profession. In the year 1851 the German apothecaries in New York organized for this purpose, and almost at the same time when these foreigners deliberated in their own way for the advancement of science, nine Americans met for a similar purpose in the College of Pharmacy of the City of

New York. It was the work of these nine men that gave rise to the American Pharmaceutical Association, and while it has been customary, and is generally admitted to be correct, that the year of birth of this Association is 1852, the work really began a year earlier, and it would therefore be of the same age as the German society. The immediate cause of the meeting of these nine men was a call from the New York College of Pharmacy to send delegates to a convention in New York, the object of the meeting to be "the adoption of a series of standards for the use of the drug inspectors at our different ports, whereby their action might be rendered more uniform and satisfactory; as well as the proposal of any measures that might be calculated to elevate the profession, and promote their interests throughout the country." It is well worth while to record the names of these men. They were:

George D. Coggesgall,	}	As delegates from the New York College of Pharmacy.
Dr. C. B. Guthrie,		
Thomas B. Merrick,	}	As delegates from the Massachu- setts College of Pharmacy.
Dr. Samuel R. Philbrick,		
Thomas Restiaux,	}	As delegates from the Philadelphia College of Pharmacy.
Samuel M. Colcord.		
Charles Ellis,		
William Proctor, Jr.,		
Alfred B. Taylor.		

Of these nine men, four afterwards became presidents of the new association, while the others served as vice-presidents or in other offices. The records at our disposal of this first convention, as it was called by the nine men, are not much more than an outline of what was really done, only the results being given. But it can be supposed that each one of the nine men was earnest and enthusiastic in the work for which he was selected by his college; that each one recognized the importance of the steps that were being taken, and that in their desire to extend the aims of this first meeting and form a national association, they all were spurred on by the same spirit. But there are two who stand out prominently above the others, two who might be called the "fathers" of the American Pharmaceutical Association, for for many years afterwards they both were present at every meeting; they never failed to take the liveliest interest in everything that concerned pharmacy; they devoted their energies to every detail of the work. Their enthusiasm, the depth of their thoughts, the purity of their motives, and the broadness of their conceptions of the work, mark them as leading men of their time. These two men are Samuel M. Colcord of Boston, and William Proctor, Jr., of Philadelphia. Two men of their types, so different from each other, yet united for the common purpose, were needed to give the new association strength and life. Mr. Colcord was a man of practical views and training, a man who understood the details of organization, and by his excellent advice and foresight succeeded in steering the young society through the many shallows that threatened it on all sides from enthusiastic and well-meaning, but incapable, friends. On the other hand, we see in Mr. Proctor the man of science, the man to whom pharmacy was a profession, the capable teacher, the man who at once inspired the new society with that exalted and noble spirit of higher education and higher work, and set aims before its members of which they had never dreamt, and which to reach had never entered their thought; but under his guidance the seemingly impossible was accomplished.

The work of the Convention was only provisional, and a committee was appointed to put the wishes of the Convention before Congress. An effort was made to establish a standard for a certain number of drugs, of which Opium, Scammony, Elaterium, Iodine, Gum Resins, Cinchona Bark, and Rhubarb were the most important. But while the object of the Convention was not overlooked, a greater work was accomplished at the same time. The members cast their eyes forward and recognized that in order to make this work lasting and broaden its field of usefulness, a larger and more representative body of pharmacists should meet, and thus the idea of founding a national association was born. It was therefore resolved to adopt a preamble and resolution to be sent broadcast all over the United States to every druggist whose name and address could be obtained, to encourage all societies, scientific or otherwise, to send delegates to the next Convention, and thus forward the object in view. These resolutions, that embody many sentiments that have agitated pharmacists up to the present day, were issued in the form of a circular, signed by the Chairman of the Convention:

"Sir:—At a meeting of Delegates from the Colleges of Pharmacy of the United States, held in this city, on the 15th of October, 1851, the following Preamble and Resolutions, explanatory of themselves were offered, and, after a free and full discussion, unanimously adopted:

WHEREAS, The advancement of the true interests of the great body of Pharmaceutical Practitioners, in all sections of our country, is worthy of earnest consideration; and

WHEREAS, Pharmacutists in their intercourse among themselves, with physicians, and the public, should be governed by a Code of Ethics calculated to elevate the standard, and improve the practice of their Art; and

WHEREAS, The means of a regular pharmaceutical education should be offered to the rising pharmacutists by the establishment of Schools of Pharmacy, in suitable locations; and

WHEREAS, It is greatly to be desired that the united action of the profession should be directed to the accomplishments of these objects; therefore,

Resolved, That, in the opinion of this Convention, much good will result from a more extended intercourse between pharmacutists of the several sections of the Union, by which their customs and practice may be assimilated; that pharmacutists would promote their individual interests, and advance their professional standing, by forming associations for mutual protection, and for the education of their assistants, when such associations have become sufficiently matured; and that, in view of these important ends, it is further

Resolved, That a convention be called, consisting of three delegates each, from incorporated and unincorporated Pharmaceutical Societies, to meet at Philadelphia, on the first Wednesday in October, 1852, when all the important questions, bearing on the profession, may be considered, and measures adopted for the organization of a National Association to meet every year.

The objects set forth in the above, I trust, will meet the hearty approbation of yourself and the apothecaries of your place, and lead to the formation, (if not already in existence) of such an association as will cooperate in the furtherance of the proposed association.

Our medical brethren have, as you doubtless are aware, an organization similar in character, holding its sessions annually, in which all matters pertaining to their profession are fully discussed—the beneficial effects of which are already apparent—although the Association has been in existence but a few years.

They cannot give to the subject of Pharmacy the attention it requires and deserves, neither is it a matter legitimately falling under their cognizance, but it belongs to the pharmacutists themselves.

The medical profession and the community at large rightfully look to us for the correction of any existing abuses, the advancement of the science, and the elevation of the business of an apothecary to the dignity and standard of a profession.

To this end we invite you to the formation of such associations, in view of the Convention, to be held in Philadelphia, on the first Wednesday of October, 1852.

Communications, intended for said Convention, may be addressed to William Proctor, Jr., Philadelphia; George D. Coggeshall, New York, or D. M. Colcord, Boston.

Any communications touching the subject of the above letter will be cheerfully responded to by the President of the Convention.

C. B. GUTHRIE,
President Convention Colleges of Pharmacy."

THE FIRST ANNUAL CONVENTION.

Thus a call was issued, and the first meeting of the new association took place on October 6, 1852, in the College of Pharmacy of Philadelphia. At this meeting there were eighteen pharmacists present, representing the Massachusetts College of Pharmacy, the College of Pharmacy of New York, the Philadelphia College of Pharmacy, the Richmond Pharmaceutical Society, the Cincinnati College of Pharmacy, and the Maryland College of Pharmacy. Besides, there were a few others present without credentials, among them Mr. Charles Bache of San Francisco, Cal. Mr. Daniel B. Smith of Philadelphia was elected first president. Mr. Smith was a thoroughly educated apothecary, well versed in all branches of pharmacy and of science generally, well-read in general literature, and in every way fit and able to preside over the meeting. At this meeting the name "American Pharmaceutical Association" was unanimously adopted. The official proceedings of the first meeting, however, speak throughout of the "Convention of Druggists," so that it should be rightly considered the second meeting of the Convention, and toward the end of the meeting a motion was made by Dr. Stewart "that when this Convention finally adjourns it will accept the invitation of the Massachusetts College of Pharmacy, and adjourn to meet, as the American Pharmaceutical Association, at Boston, on the fourth Wednesday (24th) of August, 1853," showing that the members at that time considered the Pharmaceutical Association as a continuation of the Convention, and they should therefore have really called this their second meeting.

It is natural that in such a new enterprise, intended to spread out all over the United States, much difference of opinion as to its scope, its usefulness, its aims and objects, should exist, and that probably heated debates were held over the adoption of the constitution. The first two meetings, therefore, those of 1852 and 1853, were largely devoted to the discussion and adoption of a constitution, and of a code of ethics.

The first difference of opinion arose as to who should be admitted to membership. As the Convention has simply been a convention of delegates, some argued that this was the proper point of view, that in this way every section of the country desiring to have a voice in the national association could do so by forming a small local association and sending a delegate. They argued that isolated pharmacutists desiring to take part could still become members through the courtesy of the committee. They argued that if everybody were taken in as a member, the action of the Association could be influenced by the ingress of members from large cities, who might be wholly disconnected with societies in these cities, and even inimical to them, and above all, they thought that by making the association an association of delegates, cities would be encouraged to form local organizations in order to be entitled to representation. On the other hand, it was argued that a more liberal basis should be adopted. Here it was said that every one who wished to partake in the deliberations should be welcome, if he was willing to sign the constitution and code of ethics. It was argued that by making it a delegate association the national association would be subject to influence of local organizations and would be hampered in its free action, and it was considered right that the association should be independent of all local

bodies and should put membership of the individual above membership by delegation. It was believed that if the liberal basis were adopted there would be no danger from opposing views, rather confidence was expressed that the true and right could only be found by giving every representative, no matter what his views were, an opportunity to listen and to argue. This debate at the first meeting of the Association, as will be seen, determined its future usefulness and life, and it speaks well for the broadness of view and for the correct conception of the leading men, that nearly all of them advocated the liberal view of membership, and it was therefore made as broad as possible. The Association would never have obtained the high standing and notice that it now possesses, if only delegates of existing associations could have become members.

After this vital question had been decided, the adoption of the balance of the constitution, as proposed by the committee under the chairmanship of Mr. William Proctor, Jr., passed without further objection, and the constitution of the American Pharmaceutical Association was adopted at this first meeting. Since then changes and additions have become necessary from time to time, but in a general way the fundamental thoughts as there expressed have remained the same and will remain the same as long as the Association exists.

The Business Committee, to whom the question of importation of drugs was referred, brought a new resolution, which shows what a decisive step this young association took and that it was not inclined to let anything pass by unnoticed, that they considered to come under their jurisdiction. The resolution read:

"RESOLVED, That in the opinion of this Convention, the law against the importation of adulterated drugs, chemicals and medicinal preparations, has already effected much good by excluding large quantities of inferior drugs from the market.

Resolved, That inasmuch as the usefulness of this law will be proportioned to the ability and conscientious discharge of duty of the Examiners, that this Convention shall respectfully and urgently represent to the appointing power the cardinal importance of preventing the removal of qualified Examiners on mere political grounds."

Similar resolutions were adopted at many later meetings.

The question of the sale of poisons also claimed the attention of the young association, and gave rise to a lively debate. Considering that there existed then hardly any state laws regulating the sale of poisons, it is certainly to the credit of the national association that they brought the attention of the authorities to this important matter.

Another subject that attracted the attention of the young association and which was brought up in a report by Mr. Proctor, was pharmaceutical education, and it must be noticed that from this day forward hardly a meeting passed in which this all-important subject was not discussed and enlarged upon, so that the impulse of higher education in pharmacy always came from this central point. Resolutions were also passed at this meeting, as well as at many others, against the spreading of quackery, and secret and quack medicines were denounced in the strongest terms. It will be seen that already at the first meeting the foundations of the various Sections into which the Association later divided its work were laid. The Committee on Education developed into the Educational Section; the Committee on Drug Inspection into the Section on Legislation, and the Committee on Secret Medicines and Quackery into the Commercial Section. In

the beginning the Executive Committee was created which later grew into the Council of the Association.

In order to gather statistics on the advancement of this new association, a committee was formed to investigate the status of pharmacy in the various states and bring in reports about the number of pharmacies, their scope, the manner in which they were conducted, and anything pertaining to them.

Another important work begun at the first meeting was a recommendation from the Executive Committee to collect formulae of physicians in various localities with a view of publication. Here, then, at the first meeting of the American Pharmaceutical Association, the idea of a National Formulary originated.

THE SECOND ANNUAL CONVENTION.

In 1853, the second meeting of the Association was held in Boston, August 24-26. At the roll call it was found that forty-four members were present, representing the states of Maine, New Hampshire, Vermont, New York, Connecticut, Pennsylvania, Massachusetts, Virginia, Maryland, Tennessee, Ohio, and Indiana, certainly a satisfactory growth for one year. This meeting, too, was largely devoted to considering matters pertaining to the strengthening of the bonds of membership, and to the methods of inducing the apothecaries to join the Association. It is really remarkable how ingenuous the Executive Committee was in finding ways and methods of bringing the existence of the Association to the knowledge of the fellow-pharmacists of the United States. Although the results were in some years very discouraging, faith was never lost in the final growth and national influence of the work. At the second meeting a proposition was made to appoint local secretaries, that is to say, designate a man in each large city to act as local secretary of the Association, with a view of forming local societies or of making propaganda for the national organization. At a later meeting the name of "local secretary" was changed to "correspondent," and these offices were retained for a number of years.

A number of interesting scientific papers were presented at this meeting, some of them regarding subjects that have ever since remained of the greatest interest to pharmacy. Mr. Charles A. Smith read a paper on the importance of the cultivation of indigenous drugs. As a result a committee was appointed to further the ideas expressed by Mr. Smith, and in a later meeting we have at various times correspondence of this committee with authorities at Washington and reports of greatest interest.

A subject of a peculiar nature created a long and heated debate at this meeting. A motion was made that members of the Association adopt the name "pharmician" to designate their profession. The motion was finally withdrawn, but in connection with this it is to be remarked that the name for the apothecary of those days, as shown in all reports, was not "pharmacist" as today, but "pharmaceutist," and wherever "druggist" appears, a wholesaler is understood. The constitution itself in those days began with the words, "All pharmaceutists and druggists, etc., meaning thereby the retail apothecaries and the wholesale dealers. This question of a new name agitated the minds of the members for a number of years and the same motion was repeatedly made, to adopt the word

"pharmacian" as designating "apothecary." At one time the French word "pharmacien" was used, putting an accent on the last "e", in order to indicate that the French pronunciation was desired.

At this meeting the first mention of the United States Pharmacopœia was made, Mr. Proctor proposing a resolution to request the committee on revision to issue a cheap, correct edition of the United States Pharmacopœia in duodecimo form, "as it will enable every apothecary and physician to possess a copy of that guide, and those pharmacutists and classes of persons for whose government it was created would know its real nature, extent and requirements."

Another method for propaganda was adopted by ordering a large number of proceedings, over 1000, for distribution throughout the United States. The president of the second meeting was Mr. William A. Brewer, of Massachusetts. With the second meeting the forming and welding together of the Association had been finished. It was now in existence, it had a serviceable constitution, it had adopted a code of ethics of the highest kind, it had gone through the test of the furnace of opposing thoughts and irrational schemes, it was now ready for work, and the later meetings showed that it had become conscious of its power, its influence, and its usefulness.

THE THIRD ANNUAL CONVENTION.

The third meeting of the American Pharmaceutical Association was held in Cincinnati, July 25-26, 1854. At first glance it appears as though a reaction had set in, and the forward stride of the new society had been checked. There were only twenty members present at the roll call, none from New York, and from Pennsylvania and Massachusetts only the two irrepressibles, Colcord and Proctor. But the reason for this reaction was not lack of interest, but misfortune of the times. An epidemic of cholera was raging through the Eastern States, and prevented the attendance that otherwise would have been in evidence. Mr. William B. Chapman, of Cincinnati, was elected chairman. The meeting itself, because of the small number present, did not feel justified in proposing and advocating new things, and restricted its work particularly to the consideration of various reports. Among these, Mr. Proctor's address to the pharmacists of the United States on the subject of education was adopted and ordered printed for general distribution throughout the United States. The same resolution was passed in reference to a report relating to the expediency of seeking commercial action on the special examination of drugs. The question of unofficial formulæ was discussed and a resolution passed that formulæ presented by Matthew of Buffalo, Cummings of Maine, and Meakin of New York, be collected and retained by the secretary, with a view to publication when similar contributions accumulated sufficiently to justify it. The corresponding secretary reported on the various correspondents which, as was stated before, were appointed with a view of encouraging the apothecaries in various parts of the country to join the association. He had appointed 43 and addressed them several times. Of these 16 had accepted, 5 had declined, and 22, more than half, had not answered at all. As this method of propoganda seemed to have failed, another method was proposed, namely, "that this association recommend to several colleges of pharmacy and pharmaceutical associations the appointment of committees and correspondents from their own bodies who shall

address the apothecaries of their respective sections upon the object of this association for the promotion of its designs."

The various reports and discussions on the sale of poisons also gradually assumed definite form, and it was resolved to appoint a committee of three to draft a law regulating the sale of poisons, to be submitted to the association, and if approved, to be presented to the legislature of the several states. In order to encourage the members to take part in scientific investigations and present papers to the association, two prizes for the two best essays were promised.

The question of a proper name for registered apothecary again came up without producing any results. As some parts of the constitution did not meet with the approval of the members, a committee was appointed for its revision.

THE FOURTH ANNUAL CONVENTION.

At the fourth meeting in New York, in the year 1855, under the presidency of Mr. John Meakin of New York, the question of revision was again discussed. That this revision of the constitution should last for several years is quite natural. The original small convention of druggists of a few colleges had now become a national association, with members from all parts of the country, who naturally brought different ideas and differences of opinion as to certain leading clauses. But in all these deliberations we notice the desire of every one, whether he was an adherer of the original wording, or a progressive with new and more radical ideas, to discuss the matter in the interest of better and higher pharmacy, and to subordinate all personal wishes to this one great aim.

One peculiar change in the names of the registered pharmacist is to be noted in the proceedings of the fourth annual meetings. The name "pharmaceutist" in the constitution is changed to apothecary so that in Section I, Article 2, mention is made of "apothecary" and "druggist." In the following edition of the constitution, however, the word "apothecary" is again dropped, and the word "pharmaceutist" replaced. Section VII was also added to Article 2 on the election of honorary members. This Section begins with the words "pharmacists, chemists, and other scientific men." The question of a definite name, therefore, had not yet been settled.

At the third meeting a committee had been appointed to submit a design of a certificate of membership. The leading spirit of this committee was Mr. Andrew Geier of Boston, who took great interest in a proper design and also expended considerable money for this purpose. Mr. Geier, having died in the course of the year, the committee wished to be extended, and Mr. William Proctor, Jr. was put in his place.

From a resolution passed at this meeting, "That the mere publication of reports and other papers, especially reports of committees not unanimous, shall not be considered as an expression of the views of the Association," it may be inferred that even at that time, just as at present, opponents often made the Association at large responsible for expressions of individual members or of committees, and to guard against this misrepresentation this resolution was fortunately passed.

A resolution which reappears from time to time and the subject of which has come up in meetings almost to the present day, is the question of entertainment. It could easily be understood that pharmacists of the places of meetings consider-

ed the convention an honor to their city, and extended the well-known American hospitality in the most liberal way. The resolution reads:

"Resolved, That as a body we decline in advance any convivial or other entertainments, and esteem it important as our members increase, to prevent the practice of the last three years in this respect, from being considered a precedent for the future."

As in previous meetings, we again find reports of a committee appointed "to enquire whether any and what amendments are required to the law regulating the importation of drugs and medicines, to render it more efficient, uniform and advantageous to the public at large." The gist of these reports always emphasized the need of educated and able men for collectors of the places of import, as well as honest inspectors and assayers. The fearless language in which this committee, under the chairmanship of Mr. C. B. Guthrie, expressed its views, taking the firm stand against "the party cry of the age; to the victor belong the spoils," must be noted, although we may easily understand that in those days, where the principle of spoils permeated both political parties, from the highest to the lowest member, this plea was useless. The demand for officials who would act in the interest of the purity of drugs alone, was like a cry in the desert. And yet, without doubt, these repeated messages and resolutions sent to the President of the United States and to Congress, added their part in finally producing the pure food and drug law, which has worked such a revolution in the quality of drugs.

The student of American enonomic history knows that in the years between 1850 and 1860, a new industry arose in the United States, that is, the cultivation of the grape-vine, and it was principally in Ohio, in the fertile fields and hills around Cincinnati, that the first successful efforts were made in this respect. It is therefore natural that this national association took notice of this new industry. A committee appointed at the third meeting on motion of Mr. William Proctor, Jr., now handed in a very interesting report. Unfortunately the author of this report and its leading spirit, Mr. William Rehfuss of Cincinnati, himself a large producer of wine, had died before the meeting and in his place Mr. Ellis F. Wayne read the very able paper on the growth and production of wines in the west, and on catawba brandy and tartar. This report and one presented the following year, are probably the most interesting scientific reports on this subject that have ever been rendered in chemical or pharmaceutical associations.

A great deal of time and care was devoted in this meeting to home adulteration, and the able stand that the American Pharmaceutical Association took in those days against the adulteration of crude drugs as well as finished products, as bought in a great many shops, show the earnest and fearless spirit of the members.

THE FIFTH ANNUAL CONVENTION.

At the fifth annual meeting in 1856, held at Baltimore, Md. we notice one innovation that was undoubtedly of great advantage to the Association. Up to this time the new president had always been elected at the first session of the meeting and immediately installed in office. It was therefore impossible for him to deliver what might be called an annual report. At the fifth meeting the change was made, so that the meeting was called to order by the retiring president, who continued in office for the first day and the new president was elected

on the second day and installed. This gave the retiring president an opportunity to read an address at the first session of the meeting, in which he reviewed the work done during the past year and made such suggestions and propositions as seemed to him serviceable and necessary. As is well known, this custom was further extended in later meetings, and greatly served to improve and advance the usefulness of the Association and help to bring the proper subjects to the attention of the members. Thus we find, at this meeting for the first time, a real presidential address, in which Mr. John Meakin gave some excellent advice for the guidance of the meeting. On the following day the chair was surrendered to the newly elected president, Mr. George W. Andrews of Baltimore. Besides this change in the order of business, a very important amendment was made in the constitution of the Association, by dividing the Executive Committee into two standing committees, and appointing the Committee of Progress of Pharmacy, which ever since has performed its work independently as a separate committee, and has gradually risen to that perfection which has for years characterized its work.

A further addition to the constitution consisted in the fact that the objects of the Association (Article I) were divided into five different sections. These five sections are well known to every member of the Association, having been cited many times since then, and stand in our constitution today almost in the same words as at that time. A new section (7) was added to Article II, "of the members" creating the "life members," after paying the dues for ten consecutive years. In this division, also, the word "pharmaceutist" is retained. Of the other committees appointed at this meeting, the committee of Syllabus deserves special attention, which two years later handed in a most remarkable and exhaustive report. Mr. William Proctor, Jr. was chairman of this committee.

The committee appointed at a previous meeting to report on a certificate of membership sent in a very interesting report, in which the design of the adopted certificate was explained in detail. It is too long to reproduce here, but any student of pharmacy can find it on pages 10 and 11 of the Proceedings of 1856. A number of certificates were sold at that meeting, sufficient to cover the total expenses of the committee.

A great number of collected unofficial formulæ caused quite a discussion, and a new committee, consisting of ten members representing all parts of the country, was appointed to continue this work and report at the next meeting.

This year, for the first time, honorary members were elected, the first three being Mr. Daniel B. Smith of Philadelphia, Mr. Thomas Farrington of Boston, and Mr. Madison J. Bailey of New York.

Mr. Guthrie proposed the following, which was accepted:

"That in view of the fact that great inaccuracy and discrepancy is known to exist in the weights and measures in common use among pharmacutists of the United States, a committee of three be appointed by the chair to take this subject into consideration and report at the next annual meeting."

This committee remained in existence for a number of meetings, and their reports form some of the most interesting parts of some of the proceedings.

A noteworthy paper was read by Mr. E. S. Wayne on various mineral products. He submitted a sample of paraffin from the cannel coal of West Virginia, and

stated that a ton of the coal, when distilled at a moderate temperature, yielded from 700 to 800 pounds of liquid products, which, when subsequently treated, furnished 50 pounds of paraffin. Mr. Wayne suggested that paraffin properly purified would answer as a substitute for a wax and that an oil may be extracted from the liquid products obtained by superheating, so mild in quality as to be substituted for lard and olive oil in ointments, thus obtaining both wax and oil from the coal. This report is interesting for the reason that it shows that paraffin and paraffin oil, which are now gained exclusively from crude petroleum, antedates the introduction of petroleum and its various products.

Another interesting paper presented at this meeting was one by Mr. Edward Parrish, entitled, "Pharmacy as a Business," in which harmony between the business and the profession of pharmacy is defined. It is a paper that should be read by all those who erroneously believe that a commercial pharmacist cannot be a professional man, or that a professional pharmacist must necessarily be a poor business man.

For the first time in the history of this Association, a committee was appointed to consider a report upon the expediency of having the Association participate in the work of the next decennial revision of the Pharmacopoeia. The roll of members at the fifth meeting shows that from the original nine the number of members had risen to 141, of whom 47 were present at the meeting.

THE SIXTH ANNUAL CONVENTION.

At the sixth meeting in 1857, held in Philadelphia, Mr. Charles Ellis was elected president. The Nominating Committee this year, in bringing in a report, made a notable change. Up to this time it had been the custom to select the president from the members of the place of meeting, intended evidently as a compliment. The Nominating Committee presented three names, that of Mr. Charles Ellis of Philadelphia, Mr. T. B. Guthrie of New York, and Mr. Henry F. Fish of Connecticut, and in doing so considered it necessary to explain their action. They said:

"Our reason for so doing is because this is the first instance of our meeting twice in the same city. By following former precedents we should select our presiding officer from the place of our meeting, and if this course is still pursued it is evident that a president cannot be selected from the rural districts. Although the Association never has and never should sacrifice merit to locality, yet the committee deem the present time a suitable one to make a change in the mode of nomination, and would offer three names, all well qualified."

Consequently the following motion was passed:

"*Resolved*, That in the future meetings of this association, the nomination for president be made from the members at large, without regard to the precedent which has hitherto governed us in selecting that officer from the members in the place where said meetings are held."

From the report of the Executive Committee it is noticed that even at that early time in the history of the Association, lack of copies of the proceedings of previous meetings, that has been deplored so many times since, already existed, and the committee made a plea to all the members to send any superfluous copies that they might have in their possession.

The Committee on Weights and Measures presented a very remarkable report, comprising ten pages of the proceedings, which show the earnest attention

given to this subject, and is at the same time one of the most unique papers of the proceedings. In this report they propose a decimal system, retaining the old names of weights and measures, and making the gallon of water the standard. The question of temperature and density is entirely ignored. This gallon is divided into ten pounds, each pound into ten ounces, each ounce into ten drachms, each drachm into ten scruples, and each scruple into ten grains. The weight of a grain in measure is also the lowest weight, and rises in the same decimal scale to scruples (ten grains), drachms (ten scruples), ounce (ten drachms), pound (ten ounces), and stone (ten pounds), so that one gallon of water would weigh one stone. This new decimal system of their own invention, they declared to be superior to the French system, of which they say, "the French is very beautiful in theory and is calculated to charm the classical man, but there are few such in trade and commerce." The proceedings do not mention any discussion or remarks relating to this unique report. Perhaps the meeting was taken by surprise by its radical proposition. The Committee, however, was continued, and Mr. William Proctor, Jr. and Mr. John Meakin added to it. For a number of meetings this subject of weights and measures formed one of the leading topics of debate, and it is very interesting to observe how, under the guidance of men of science, the Association gradually cleared its mind and worked its understanding up to the general metric system.

The report of the Committee on Unofficial Formulae was presented by Mr. Meakin of New York, and referred to the Executive Committee for publication with discretionary power. We find about twenty pages of the proceedings devoted to these formulae. They were presented by various members from different parts of the country and printed without any comment, and no attempt was made to simplify or explain them; yet this part of the proceedings of 1857 may be considered as the first attempt to publish a forerunner of the National Formulary.

The Committee on the Revision of the Pharmacopoeia made a lengthy report, recommending that a committee of ten should be appointed to "represent the pharmaceutical knowledge and skill of the Northern, Southern, Eastern and Western States in a preliminary revision of the Pharmacopoeia." Realizing that the American Pharmaceutical Association, not being an incorporated society, could not be represented at the convention for revising the Pharmacopoeia, it was proposed that their report should be handed to some incorporated college of pharmacy, and the committee further made this recommendation, "that a committee to nominate ten members for a Pharmacopoeia Committee, and report at a future sitting, be appointed by the chair." In consequence of this report the desire, not to say necessity, of incorporating the Association arose, and we have hereafter for many years, a Committee on Incorporation. This committee reported at various meetings, but the desired result was not reached until 1888, when the act of incorporation was finally obtained. It will be seen, therefore, that it took an agitation of thirty-one years for this committee to accomplish its aim.

The Executive Committee also reported that according to the instructions received at the last meeting, they sent a petition to the Secretary of the Treasury, Mr. Howard Cobb, urging upon him the necessity of selecting the right person for the position of collector of the ports of entry and inspection of

drugs. They also state that a similar report was forwarded from the Massachusetts College of Pharmacy, by all the medical associations of that state and also from Philadelphia. They close their report with the words:

"A most efficient officer of long experience has been displaced, and the post filled by one totally unknown to the College of Pharmacy, apothecaries, or importers of the city, and who claimed the appointment solely upon the score of his political services and qualifications. The Committee feel constrained to protest in their own name, and in the name of the Association and the interests of humanity, against the prostitution of this wise and salutary measure to the mere purposes of political partisanship, and therefore recommend that the Association take such action as shall bring this matter before the next session of Congress for the purpose of so amending the law that it shall be protected from such management as nullifies its provisions."

As a result of this report it was resolved that a committee be appointed to memorialize the next Congress in the name of this association for such an amendment to the drug law as shall place it upon a better basis and make it a more effectual protection to the community and the interests of the apothecary.

The same clear, concise, and fearless language that is shown in these reports and resolutions is also found in a report presented by Mr. Proctor on the relation between physicians and pharmacists, and the physicians were urged to cooperate with the Association to bring about a more satisfactory relationship, particularly as to the dispensing of medicines on extemporaneous prescriptions.

Quite a number of scientific papers, as proposed by the Executive Committee, as well as voluntary essays, were presented at this meeting. Two of these deserve special mention, presented by two pillars of pharmacy, one by Mr. Edward Parrish, the other by Mr. John M. Maisch. Mr. Parrish's paper, called "Ethical Analysis" is rather a philosophical one, but based on close observation both of science and practice. After reviewing the different methods and analyzing chemicals, assays, and plants, he tries to apply these same rules of analysis to the pharmaceutical profession, and to the individual pharmacist, and shows how an analysis of his thoughts, character, and actions, might be of service to himself and to the profession at large. His paper ends in a number of questions of an ethical nature, questions that have agitated the pharmaceutical world ever since, questions of moral standing and ethical action that will probably continue to be discussed and analyzed as long as pharmacy exists. But probably no other paper delineates so well the character of this prominent man, the purity of his methods, the beauty of his thoughts, and the height of his aims in his profession. It might be called his profession of faith and shows that in the turmoil of commercial and political upheaval, which filled the air at that time, his mind was principally filled with those ideal thoughts for which he is known to the few of his contemporaries that still live and which he reveals to us in this paper in such a beautiful way.

The other paper, by Mr. Maisch, was called "On the use of our indigenous plants." It is the first paper of importance that Mr. Maisch presented, and it may also be said to be indicative of the man. *Ex ungue leonem*. He urges in this paper the study of indigenous plants for the purpose of replacing plants from the whole world as then used in medicine by domestic ones. He urges the student to look for them, to love them, to analyze them, to use them. He shows that it is one of the most beautiful phases of the vocation of pharmacy to use leisure hours in

this direction. His language is simple, but clear and precise. It shows his love of this subject, and this paper may be called the outline of his whole future life. What he here urges other to do, what he proposes as so much worth while, he did afterwards in the many years of his useful life and from this day the proceedings of the Association are filled with the most interesting and useful papers from his pen. He followed this article shortly afterwards by the very remarkable paper on "Essential Oils" in the proceedings of 1858.

THE SEVENTH ANNUAL CONVENTION.

The seventh meeting of the Association, in 1858 was again held at Washington, and Mr. John L. Kidwell of Georgetown, elected president. The retiring president, Mr. Charles Ellis, read his report at the first session, and gave a short review of the history of the Association during the first six years. This meeting was perhaps the most scientific of the first decade, as a great number of scientific papers were presented on various subjects. The Executive Committee, according to custom, prepared a list of forty different subjects for investigation for the ensuing year, allotting each one to a member who took special interest in his subject, and leading men, representing both the commercial and scientific sides of pharmacy, accepted the subjects.

The report of the Committee on Weights and Measures, which in 1857 had presented such a unique report, again occupied many pages of the proceedings. The majority of the committee were evidently in a doubtful state of mind, and they discussed the subject by philosophical reflections on the difficulties and infirmities in all earthly things in general, and in weights and measures in particular, without presenting anything tangible. In a prophetic mood they expressed this desire, which has long since become a reality:

"When earth shall have an electric current encircling it from the Atlantic shore to the Pacific shore, conveying its messages from point to point for love or profit, at least its commercial wants should be known in uniform words, meaning the same here and in London, in Paris and Lisbon, in Constantinople and Sierre Leone, in Rome, if she has anything to sell, and Norway. What a grand idea it would be to be able, as we shall be, to flash our orders to London, Liverpool, Berlin and Paris for any wants we may have unsupplied, and when we speak of pounds or ounces here they understood the same there. Or still more, if we extend the limit of our orders to the remoter nations, to know that the same uniformity rendered the orders as intelligible in one portion of the world as another. The members of this Association may not live to see this, but it is not a prophecy, for the lines have gone across the conquered seas that proclaim the harbinger of such a day; and though it may be far off, yet the time will come when a uniform currency and a uniform system of weights and measures will be one of the indications of a millennial day, awaking harmony, peace and prosperity in all the lands of the earth."

A supplement to this report was handed in by Mr. Meakin, who evidently viewed the situation in a clearer and more practical way, and recommended the adoption of the French decimal system, modifying it, however, in so far, that he proposed a centennial scale instead of a decimal, skipping each second link. He makes the centigram the unit, the gram or 100 centigram the next step, and the hectogram, 100 grams the following. In the same way he proposes the centiliter and liter. No action was taken by the Association and the committee was continued.

The report on local unofficial formulae greatly enlarged the list, which were

ordered printed as before. The report of the committee on the desired amendments to the United States law regulating the importation of drugs and chemicals, read a petition presented to Congress, which in able, concise, and fearless words covered the subjects as discussed in the former proceedings. A member of the government was present at this meeting, Mr. E. J. Brown of the Patent Office, and made some very interesting statements relative to the introduction of some foreign medicinal plants in this country. As a result of his remarks a committee was appointed to confer with the Agricultural Department of the Patent Office for further conference.

The subject relating to the revision of the Pharmacopoeia was continued as proposed in the previous meeting, and a committee of three was appointed to whom the accumulated correspondence and suggestions in reference to this subject was referred for further report.

Among the many scientific papers presented at this meeting, two are worthy of special mention, one by Mr. I. G. Graham, called, "The process of percolation or displacement, its history and application in pharmacy." While today this subject is a very familiar one to the young student of pharmacy, it was certainly an epoch-making paper. It put before the pharmacists of the United States this method of making preparations in a clear and concise way, and the propositions made by a number of teachers in this direction, particularly Messrs. Parrish and Proctor, gradually bore fruit.

The other paper was that of Mr. E. R. Squibb of New York, called "Notes and suggestions upon some of the processes of the United States Pharmacopoeia, especially directed to the Committee of Revision." This paper, comprising nearly fifty pages of the proceedings, is typical of a great many others of the same nature, all directed to improve the methods and processes of the Pharmacopoeia, and shows the enormous interest that professional pharmacists in those days took in the new work that was put before them—the revision of the Pharmacopoeia. Mr. Squibb's paper is probably the most complete of its kind, going alphabetically through the whole list of articles in pharmacy, showing in a clear, short, but scientific manner, the defects that existed and proposing new methods.

The greater part of the proceedings was taken up by a report of the Committee on Syllabus, which committee, however, seems to have resolved itself into one man who was its guiding spirit, Mr. William Proctor, Jr. This report, comprising sixty-four pages, most of them printed in very small type in order to save space, may be called a work on "The Practice of Pharmacy," which indeed it is. It deals with every part of pharmaceutical manipulation that may be mentioned and taught in a college. It represents, we might say, the thorough work of the author, and he presents it here to his fellow teachers and fellow members of the Association in this disinterested way. Any teacher on pharmacy might take this Syllabus as his guide and by following it, know that he does his work well. For although many things have been changed since then, many new methods been invented, and many drugs and chemicals that he mentions have been dropped from the Pharmacopoeia, yet the fundamental thoughts have remained the same, and always will remain the same, because they represent the fundamental principles of pharmacy, good practical work based on sound scientific theory.

THE EIGHTH ANNUAL CONVENTION.

Boston was again selected as the place for the eighth annual meeting, which was conducted under the presidency of the venerable Mr. S. L. Colcord. It was one of the most fruitful meetings the Association ever had, interesting both to the commercial man as well as to the student of pharmacy. The retiring president being absent, the acting president, Mr. Robert Battey, made a short address which dealt largely with the question of membership. The cause for this was probably the report that the Executive Committee presented at the first session, when they read the list of names of new members. They reported that they had an additional number of names, but were in doubt as to whether these men were eligible or not. The proceedings do not make any clear statement as to what objections existed, but from the arguments made on the subject and from other indications, we may surmise that some of the candidates belonged to the eclectic and homeopathic schools of medicine and some were chemists and not apothecaries. The Executive Committee seemed to be in doubt whether under the rules of the constitution which spoke only of pharmacutists and druggists, these men were eligible. A notable discussion arose, some advocating the broadest liberality of accepting members, others being very strong and set in their opinion to exclude everyone that did not strictly come under the words of the constitution. The subject was finally referred back to the Executive Committee. The acting president again mentioned this subject without making any definite recommendations, and the question was left undecided, to be taken up at the next meeting. In connection with this the standing of delegates from pharmaceutical societies or colleges in reference to their eligibility as members was also discussed, and the question raised whether the Association had a right to inquire into their character and ability. After various remarks on this subject it was decided by the president that according to the constitution the Association had no right to do so and that these delegates must be accepted as members if they choose to become such. This policy has ever since been followed.

From a resolution passed, not to use the name of the Association for advertising purposes, we infer that such efforts had been made and that this tendency of certain manufacturers to join the Association for this purpose already then existed.

The question of a charter for the Association, which had already been taken up at the sixth meeting, brought with it the idea of having a permanent meeting place, as the opinion seemed to prevail that this was necessary for the granting of a charter. At various meetings, therefore, from now on, we find resolutions of this kind, at one time proposing New York as such a permanent place, at another time Washington, D. C., at another time Washington was proposed as the headquarters, to meet there every five years, and the others years to meet in Boston, New York, Philadelphia, and Baltimore. It is fortunate for the Association that all these attempts were unsuccessful, and that the migratory character of the Association was thereby preserved, which without doubt added greatly to its increase and thereby to its influence.

The question of cultivating medicinal plants in this country was again taken

up and it is remarkable how much time, thought, and labor was devoted to this subject. Not only were long reports presented, but also a very voluminous correspondence of the committee appointed for this purpose with the agricultural patent office at Washington. Special papers were also submitted by some of the leading members, dealing with certain plants and certain districts. The Agricultural Department in a very long and interesting letter to Mr. Kidwell, the president of the Association, mentioned a number of plants that had successfully been cultivated in the Propagating Gardens in Washington, and living specimens were presented at the meeting. These specimens comprised *Melochia* or Soap Plant from Egypt, Cork Oak from Spain, Green Tea from China, Wax Tree Plant from Japan, Wild Chamamile from Russia, Black Tea from China, Camphor Tree from China. Among the papers relating to these subjects the most notable is that by Mr. H. A. Tilden, on "Therapeutic value of foreign and indigenous medicinal plants." The committee to confer with the authorities in Washington on this subject was continued.

The most notable report of this meeting, and probably of all the meetings of the Association, was the report of the committee on weights and measures. It comprises more than 100 pages of the proceedings and is the most exhaustive treatise on this subject that has probably ever been written. It mentions the various systems of measuring and weighing of all civilized peoples, in Asia as well as Europe, from the earliest dates of history, and makes comparison and draws conclusions in a very interesting way. Any student of this subject should not neglect to study this report, as it is full of interesting details, facts, and conclusions. The committee finally comes to the conclusion that a new system which they evolve themselves, and which they call the Octenary System, is superior to any other, and they propose this system for adoption. The principal argument in favor of this system is the binary subdivision, which it admits, and they say in a prophetic mood, "We assure that its adoption is only a question of time." "We must avow our belief that France will be the first of nations to hail its advent and welcome its adoption." The author of this remarkable treatise on weights and measures was Mr. Alfred B. Taylor of Philadelphia. It is a peculiar coincidence that in the proceedings, right after this report of the Committee on Weights and Measures, and its strong and enthusiastic recommendation of this new octenary system, the committee on the revision of the Pharmacopoeia, in a very quiet way, recommends, two pages later, to the commission of revision, the changes in the system of weights and measures that had been made in Great Britain. The proposition agreed upon was to substitute the *avoirdupois* weight with the Troy form. This report on the revision of the Pharmacopoeia is also a very exhaustive and interesting one, and deals with a great many articles and preparations for which changes or additions were recommended. It was submitted by the chairman of the committee, Mr. Edward Parrish of Philadelphia.

In a similar, able way the question of Home Adulteration was treated and a great many instances of adulteration cited. As a characteristic sign of the times and the tendency to adulterate almost everything, it was mentioned that there was in the open market an article which was sold under the name of "the great adulterator," which, according to the originator, could be used to adulterate almost

any chemical in the market. This adulterator was, according to the committee, selenite or sulphate of lime. It was imported into New York in enormous quantities and there powdered for use.

An effort to write a "History of pharmacy and its progress as a science from the earliest period to the present time," was made by Mr. James O'Gallagher of St. Louis, in a very able paper that is full of interesting facts to students of pharmacy.

In these proceedings we also find the first mention of pepsin, which then began to be known to the medical and pharmaceutical professions. Mr. A. Cushman of New York wrote a very interesting paper on this subject, reviewed the history of the article and gave the views of various physiologists and scientists on its value. As the Latin synonym he gives "Chymosin Gasterase."

The most important papers of this meeting were written by Messrs. John M. Maisch and William Procter, Jr. Mr. Maisch's paper was on the behavior of essential oils to iodine and bromine, and may be considered a succedaneum to his paper presented at the seventh annual meeting in 1858. Many of the tests and investigations that he recommended in this paper have been retained by the scientific world to the present day and bespeak the infinite care and great working capacity of the author. Mr. Procter furnished a very able paper on "Formulae for fluidextracts in reference to their more general adoption in the next Pharmacopoeia." Without going into the details of this remarkable and exhaustive paper, it may be stated that nearly all his recommendations later found their way into the United States Pharmacopoeia, and in many instances the exact wording of the process as he recommended it have been retained.

THE NINTH ANNUAL CONVENTION.

In the following year, 1860, the Association again met in New York for its ninth annual meeting. Mr. Henry T. Kirstead of New York was elected president. After the introductory remarks of the president the report of the Executive Committee always formed the first part of the proceedings. It can be inferred that a great many of the manuscripts presented for publication were written very carelessly, and the Executive Committee requested that the manuscripts be fairly and legible written and in a proper state to be given to the printer, and "all papers and manuscripts not so submitted to be excluded from the report unless delay be granted by the vote of the association." This rather catagorical demand which they presented in the form of a resolution created a long discussion, but was finally not accepted.

One of the most beautiful papers ever presented to the American Pharmaceutical Association was the address of the retiring president, Mr. Samuel L. Colcord. In this address the chairman deals with all the various subjects that were then of interest. He first regrets the delay in issuing the proceedings, he reviews the reasons for it, and urges the authors and committees to be more prompt and exact in remitting their copies. He says:

"I see no reason why our proceedings should not be published within thirty days after adjournment."

Speaking of the act of incorporation, he touches the subject of the broader and wider sphere of the Association to which it should aspire, and closes this appeal with the wonderful words:

"Taking this view of the subject into consideration, a charter with educational powers conferred, from some State encouraging such efforts, would answer our purpose better than one from the general government. We could then, in addition to encouraging local schools and colleges of pharmacy, organize a learned faculty on a uniform national basis: conferring on them the power of examining candidates and conferring degrees, granting diplomas and certificates of qualification. The appointment of professors could be made from the professors of any colleges or schools already organized, and as many could be appointed as would be required from time to time. Lectures and courses of instruction prepared by them and approved could then be at the service of any number of pharmacutists or assistants who would properly organize to receive them, by paying only the expense of their delivery, leaving it at their option to choose from any of the professors thus appointed, whose services could be secured at the terms mutually agreed upon. It would then become an object for men of talent to qualify themselves for the office and pursue it as a business, by having sufficient number of such classes, especially if the professors were connected with laboratories, botanical gardens, etc."

When he speaks of the question of adulteration he closes with the words:

"I cannot too strongly urge upon you the duty as well as policy of making no compromise with adulterations and adulterators. If there is any sin that should be exposed and punished, it is that which lurks unseen and works mischief and death upon innocent parties."

In equally strong and beautiful words he speaks of the Pharmacopœia, hoping that we may expect

"in due time a national work that should carry weight and authority with it sufficient to do away with all private formulæ for official preparations. It is to be hoped that the Pharmacopœia will be a work of fixed and available standards, and that all who follow the profession of pharmacy will strictly conform to it, that we may have one uniform standard throughout the country, no matter how great a change it may make in the preparations that have been previously in the market."

When he speaks of the conflict that sometimes exists between commercial and professional pharmacy he comes to the conclusion that there is a duty to be performed and says:

"As to the medicinal articles in which we deal, it is clearly our duty to create a demand for pure medicines of reliable quality, as the only safe articles for our patrons to purchase: we should therefore strive to create a demand for this class of goods in preference to the medium and lower grades of quality."

Finally he gives some beautiful advice to the young student or practitioner in pharmacy, saying:

"Should his heart be bent on a life of usefulness, a determination to explore and master the mystery and detail of the business, and acquire confidence to stand before his customers as one that can answer their wants equal to any competitor, and secure a list of personal friends from among them: should he explore the sciences, and investigate theories connected with his business, as amusements or pleasures, storing up knowledge for truth's sake, cultivate the acquaintance of those in similar pursuits, and make friends from among the stars of his own profession, and intimate acquaintance with the records of those denied a personal acquaintance: society would seek him for his worth, the mortar would yield him pleasure, the graduate would be to him a cup of happiness, and the outside world would form to him a concentrated variety of the same happiness which other people enjoy."

The whole address is characteristic of the man. In it he pours out the inmost thoughts of his heart; his infinite love for his profession, his readiness to work, his courage to face every difficulty that besieged his vocation, his great confidence in the bright future of professional pharmacy, his broad experience in all pharmaceutical subjects, his clearness of vision in giving advice to the young—all these

are reflected in this beautiful address couched in simple but effective language. It should be held up as a confession of faith, and should be recommended to every student of pharmacy in every college in the country.

That the Association was not afraid of too large a volume of work may be inferred from the report of the committee to present subjects for investigation for the following year. It proposed a list of fifty subjects, practical and professional, each one being assigned to one member.

It had been the custom for some time to accompany the meetings with exhibits of chemicals, drugs, galenicals, and other articles of interest to the pharmacist. Each year a committee was appointed at the beginning of the meeting to examine this exhibit and make a report to the Association. The exhibitors were not only wholesale dealers and manufacturers, but very often retail druggists brought the results of their laboratory and yearly work to the knowledge of their colleagues with good results.

A somewhat heated debate again took place on the question of membership, two of the leading men taking opposing sides, Mr. Edward Parrish taking the view of admitting everyone who was in any way qualified, while Mr. E. R. Squibb advocated a restriction of membership. One of his remarks closes with the words:

"If you take in these men (meaning some eclectics and chemists) you certainly will drive me out of the Association."

No action was taken by the Association, and the question was left open.

As the following year was to be the decennial meeting of the Association, it was proposed to prepare a notice of the work of the first ten years and Mr. Thomas S. Wiegand of Philadelphia was appointed by the chair to that duty. When the newly elected president, Mr. Henry T. Kirstead, took the chair, he foreshadowed in his remarks the dangers that surrounded the meetings of the Association from the political condition of the country, saying:

"At a time when sectional strife and jealousy has sown the seed of discord in almost every widespread organization: when not only political, but even religious questions have been embittered by mutual distrust and suspicion—it has been eminently gratifying in such times to witness the dignified indifference with which this scientific body has pursued the even tenor of its way." No clamor of demagogues has found an echo here. No factious whisper has ever disturbed your harmony. With true patriotism and philanthropy you have met year after year, from North and South, from East and West, to discuss, like brothers, questions involving the common good of all."

He little presaged that the very reason, the absence of which he blessed, would prevent the decennial meeting. It was planned to hold this meeting in St. Louis, and a committee was appointed to find out ways and means of having a larger attendance there than at any of the previous meetings. The report of the Committee on Weights and Measures is not printed in the proceedings of 1860. It is only mentioned that a debate took place on the same and that finally Mr. Squibb offered a resolution which was adopted, namely:

"That in the judgment of the association it is expedient and practicable in the official formulae of the Pharmacopoeia to abolish the use of measures of capacity, and to substitute for absolute weights and measures the term *parts*, meaning parts by weight; and that this association recommends such a change as the most simple, practicable, and effective one that can be at present made."

In connection with this another resolution was passed, which was proposed by the Business Committee, whose chairman was also Mr. Squibb, namely:

"That the change of weights recently adopted in the Committee of the Council for consolidation and revision of the British Pharmacopoeias, by which change the table of avoirdupois weight is adopted, with a new division of the avoirdupois into 480 parts, to be called grains, meets the approval of this association, and is recommended for adoption in the National Pharmacopoeia."

A very large part of the proceedings was taken up with a report of the Committee on Progress of Pharmacy, which indeed showed a zeal and working capacity to a remarkable degree. A long discussion also took place on the question of the sale of poisons, in which a great many medical men from New York who had been invited to the meeting, took part. A new poison law of the state of New York formed the subject of discussion. Many interesting views were advanced and the relationship between physicians and pharmacists in the prescribing and dispensing of poisons ventilated at length. However, no action was taken at the meeting, and a committee was appointed to report the following year.

A small voluntary paper presented by Mr. John Faber of New York on "Remarks on manufacturing pharmacy" was received with great favor. Mr. Faber recommended in this paper strongly the preparing of galenicals in the shops. He pointed out the advantages that the apothecary would gain by making his own tinctures and fluidextracts and dwelt particularly upon the benefit that the apprentices and young assistants would derive by seeing and doing such work. Nearly all the leading men present at this meeting endorsed this paper and expressed their approval.

With this meeting the first chapter of the history of the American Pharmaceutical Association may justly be closed. The meeting of the following year, which would have been the decennial one, did not take place, and when the Association met again in 1862, it did so under different political conditions. Hardly ever did an association fulfill its purpose in such a decided way as did the American Pharmaceutical Association in its first ten years. The membership had risen from 9 to 501. It had gained the attention of the pharmacists and local associations of the country, it had made itself known to the government at Washington. It had been instrumental in forming a great many associations in various states, it had advanced the cause of education and encouraged the colleges to additional work and higher aims. It had attracted to its ranks all the leading pharmacists of that time in the United States, as its roster will show. It had created a valuable pharmaceutical literature through the work of the committee on the progress of pharmacy, it had collected a treasure of information and put this at the disposal of everybody who wished to avail himself of it. It had raised the professional spirit, not only among its own members, but among the pharmacists all over the country. Its thought, investigations, works and deeds had given it the undisputed right to existence and leadership among the pharmaceutical profession of the United States of America.

Contributed and Selected

A FEW POINTS ON FIRE INSURANCE.*

WALTER ROTHWELL, HATBORO, PA.

How much fire insurance he should carry on his stock, and in what companies to carry it, is a question which confronts the druggist as it does every other business man. As a matter of fact, few give to this question the attention which it deserves, because next to having something which will burn up, the most important thing to know is that somebody will make good to you if it does burn up. Now, I take it that there is no one who will deny the importance of owning property, and I am sure that all will agree that the more one does own, the better off he is. As stated, next in importance to being the owner of something, the more the better, it is to know that if it should be destroyed some one will make good the loss, and yet this feature next in importance is frequently disregarded.

How Much Insurance Should One Carry? This naturally depends first of all upon the value of one's property, and then on how the owner is financially situated. Whether the property is located in so-called fire proof buildings, or in frame shacks, should never control, because in both instances the property is subject to destruction by fire, and the cost of carrying insurance is dependent upon the relative safety from fire loss. The man whose risk is located in a so-called fire proof building owes just as a great a duty to himself and those dependent upon him to carry insurance, as does the man whose risk is located in an easily destroyed building, and the one can afford to do so, because he will secure his insurance at a much lower rate than will the other. It may, therefore, be stated that as a general rule the amount of insurance one should carry depends upon the value of the property, and the financial circumstances of the particular individual, and both of these features are of sufficient importance to require separate consideration.

The Value of Property. It goes without saying that no druggist can know the value of his property, unless he makes an inventory at regular intervals. To correctly insure property the very first essential is an annual inventory. This inventory should be made each year at about the same time. It should be accurately made; there ought to be no estimating or guess work about it. After the inventory is compiled, unless one has a fire proof safe at his store, it is best to keep it at some other place. At this point it may be well to briefly touch upon some of the added advantages of having an annual inventory, aside from

*Read before the Pennsylvania Pharmaceutical Association.

taking it as a basis for the amount of insurance to be carried. An inventory is essential for the proper adjustment of a fire loss. The man who is without an accurate, up-to-date inventory is at an enormous disadvantage in case he has a fire of any consequence. It is hardly necessary to direct your attention to the fact that no insurance company would undertake to pay your loss on your say so. They have a right to know that the property of which you claim to be possessed was actually contained in the building, for without having fair means of proving this, a man might claim to have \$10,000 worth of property, when as a matter of fact he has only \$5000 worth of property. Therefore, when you have a fire you are supposed to prove what has been destroyed by the fire, and how are you going to do it, unless you have an annual inventory, and a record of your purchases and sales. The man who has such annual inventory and record, may rest easy, while the man without such inventory has neglected one of his most important duties, which in case of fire will bring innumerable annoyances and difficulties.

After Value Ascertained, How Much Insurance to Carry. Having ascertained the value of your property, and in doing this having allowed for depreciation on fixtures and on stock which is more than a year old, it is comparatively easy to decide on the amount of insurance to carry. As already stated, this in part must be controlled by the financial circumstances of the particular individual. If a man is heavily in debt, he should carry full insurance; he owes it, not only to himself, but to his creditors and those who are dependent upon him. If a man has practically all of his worldly possessions in one place, he should carry full insurance, or at least insurance up to eighty (80) per cent. of the property value. On the other hand, if only a comparative small part of one's property is located in one given place subject to destruction in one fire, and is not greatly in debt, if any, then the matter of insurance is largely one of choice. Those who have their property widely distributed, so that one fire is likely to destroy only a small fraction, can afford to carry their own insurance in part, and to them the matter of how much insurance to carry is not so important, but it is rather the rule that druggists are not in that position, and consequently they are usually in need of insurance, and should usually carry an amount up to the full value of their property, or at least up to eighty (80) per cent. thereof. It is my judgment from the experience which I have had, that the man who has an investment up to \$10,000 in one place, which represents practically all that he possesses, should carry insurance up to the full value of it. He certainly should do this if he is largely in debt; if he is not in debt, under such circumstances, insurance up to eighty (80) per cent of its value should be sufficient, and is in keeping with good business judgment and conservative management. This is particularly true, because out of every hundred fires not more than five are total losses, so that aside from the chance of having no fire at all is a further one, that in case of fire, in ninety-five instances out of a hundred, the fire will bring only a partial loss. The above rule for determining the amount of insurance to carry is, after devoting such study as I have been able to give, a fair one to follow, in my judgment. Assuming that in the average case it is best to carry

insurance up to at least eighty (80) per cent. of the property value, I would add that where the premium is in excess of \$10.00 per thousand, it is always well to carry insurance under the eighty (80) per cent. Co-Insurance Clause, because depending upon different sections the credit allowed for the use of the eighty (80) per cent. clause, is from fifteen (15) to twenty (20) per cent. of the premium charge, but in such case it is imperative to know that the amount of insurance is at least equal to eighty (80) per cent. of the property value, for otherwise the assured is a co-insurer for the difference. For the careful business man, the man who takes and has an annual inventory, and knows the value of his property, the Co-Insurance Clause is always of advantage. The man who does not know the value of his property, had best avoid the Co-Insurance Clause.

Where to Place Your Insurance. This part of my subject I approach with some hesitancy. It however is my endeavor to express an impartial and honest opinion, entirely separate and part from my connections. So far as I can understand the situation, it is never well to place your insurance in companies or concerns that are not licensed, and that are thus not under the supervision of the State Insurance Departments. Even with such supervision, insurance companies have failed and will fail, but without such supervision, it is nothing short of a gamble. State supervision at least is a guarantee of a company having the minimum amount of capital and reserve, which under the law is required, and the requirement for which has been determined and found necessary by past experience. Having made sure that the company or companies with which you would place your insurance are properly licensed by the Insurance Department, and under its supervision, then it becomes a question to decide as to the relative merit and reliability of stock companies and mutual companies. Stock companies as a rule are undoubtedly the most reliable and safest, but as a rule also their premium charge is higher than is that of mutual companies. Mutual companies may be just as reliable and just as safe as are stock companies, but the careful business man will avoid mutual companies which have not accumulated a substantial reserve and surplus. If a mutual company has been in existence for more than ten years, and has accumulated a substantial cash reserve and surplus, then one may with fair assurance place trust and confidence in it, but if it is still in its experimental stage, or without substantial reserve and surplus, then it is my advice to let the other fellow experiment with it. With mutual companies you are always running some risk, that you do not run with stock companies. In short, when you carry your insurance in mutual companies you insure yourselves, and your own liability and responsibility, coupled with that of other policy holders, determines the safety and reliability of your insurance, whereas in stock companies, the stockholders are the ones who have put up their money to assure safety, reliability and ability to meet losses. In the one case you insure yourself; in the other case, the other fellow insures you. With all fairness and honesty, it must be the general advice, that unless a man has the time, knowledge and opportunity to study the reliability of a mutual insurance company, it is better for him to avoid them, and place his trust and confidence in stock companies.

MODIFIED FORMULA FOR ARSENIC ANTIDOTE.*

 OTTO RAUBENHEIMER, PH. G.

The importance of an official antidote for arsenical poisoning is recognized by all the pharmacopœias. These official antidotes can be properly divided into four classes:

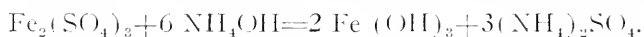
1. Freshly precipitated, moist or gelatinous ferric hydroxide, which is official in the United States, the French, the Spanish, the Italian and the Roumanian pharmacopœias.

2. A mixture of calcined magnesia and water, the so-called Antidotum Arsenici Album,—official in the Austrian, the Greek and the Russian pharmacopœias.

3. A mixture of calcined magnesia and water with a solution of ferric chloride, official in the Belgian, the Danish, the Netherlands, the Portuguese and the Swedish pharmacopœias.

4. A mixture of calcined magnesia and water with a solution of ferric sulphate, the so-called tersulphate, which is official in most of the pharmacopœias, namely those of Finland, Germany (Supplement), Greece, Hungary, Japan, Roumania, Russia, Switzerland and the United States, and is also recognized in the British Pharmaceutical Codex published by the Pharmaceutical Society of Great Britain.

In the preparation of ferri hydroxidum it is absolutely necessary that the *cold* process be used; for instance, by the double decomposition between solution of ferric sulphate and ammonia water as expressed in the following equation:



If heat is used or upon prolonged keeping the brown ferric hydroxide will be changed to the reddish brown ferric oxyhydrate $(\text{Fe}_2\text{O}_3) \cdot \text{Fe}_2(\text{OH})_6$ or $\text{Fe}_2\text{O}_2(\text{OH})_2$, which does not possess the power of combining with weak acid or arsenic trioxide. According to such investigators and chemists as Bunsen and Berthold, the freshly precipitated ferric hydroxide is an effectual arsenical antidote because it forms various insoluble basic ferric arsenites.

Inasmuch as an antidote in arsenic poisoning is wanted in a great hurry, and as the preparation of freshly precipitated ferric hydroxide takes time, the United State Pharmacopœial Revision Committee was very wise indeed in admitting a preparation which can be quickly and freshly prepared, namely, ferri hydroxidum cum magnesiæ oxido.

The *modus operandi* is as follows—40 cc. of solution of ferric sulphate are diluted with 125 cc. of water and the liquid is kept in a well stoppered bottle having the capacity of about one liter. Ten gm. of magnesium oxide are triturated with cold water into a smooth and thin mixture and, according to the United States

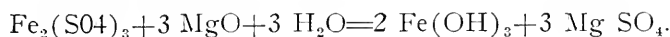
*Read and demonstrated with specimens, at the meeting of the New York State Pharmaceutical Association at Rochester, June 26, 1912.

Pharmacopœia VIII, this is then transferred to a bottle capable of holding about 1000 cc. and sufficient water is added to fill it about three-fourths of its capacity.

Evidently this step is taken so as to be able to shake the magnesium oxide mixture into a homogeneous thin magma which when the antidote is required is gradually added to the diluted ferric sulphate solution.

It should, however, be remembered that by keeping the magnesia mixture in a bottle only three-quarters filled it will be liable to absorb CO_2 , which is not wanted in the finished product. The United States Pharmacopœia very correctly calls attention in a note to the fact that for the rapid preparation of this antidote to arsenical poisoning the two solutions, or rather, the iron solution and the magnesia mixture should always be kept on hand in separate bottles ready for immediate use.

The following reaction takes place:



Besides its extemporaneous preparation this medicament has the further advantage that the magnesium will also precipitate the arsenic as white magnesium arsenite. Besides that the magnesium sulphate formed will at the same time act as a cathartic.

The preparation is unquestionably a more efficient antidote to arsenic than either of its ingredients by themselves.

The average dose as an arsenical antidote is 120 cc.

Every practical pharmacist knows that magnesium oxide does not produce a very smooth mixture with water and always tastes gritty, one of the disadvantages of preparing milk of magnesia by this method.

Magma magnesiæ N. F. will be admitted into the United States Pharmacopœia, and is much better suited for the preparation of the arsenic antidote. As can be seen from the present National Formulary formula, it is a finely precipitated and suspended magnesium hydroxide, 5 gm. in 100 cc.

I have successfully employed milk of magnesia in the preparation of arsenical antidote for years and found that it produces a superior preparation containing the ferric hydroxide in a finely divided state.

10 gm. MgO = 14.5 gm. or in even numbers 15 gm. $\text{Mg}(\text{OH})_2$, the slight increase being also an advantage, and this quantity is represented in 300 cc. of milk of magnesia.

My *modus operandi* is to dilute this quantity with 300 cc. of water and keep this mixture in a bottle holding about one liter. Also dilute 40 cc. of the solution of ferric sulphate (tersulphate) with 260 cc. of water and keep the solution in another bottle. When wanted add the iron solution gradually to the magnesia mixture and shake well and the antidote is ready for administration.

My claims for the superiority of the preparation made according to the modification are as follows:

1. The finely suspended magnesium hydroxide in the milk of magnesia forms a smooth and finely divided magma of ferric hydroxide, as can be easily seen by the submitted sample.

2. Such a magma unquestionably has therapeutic advantages in combining more readily with the arsenic.

3. By pouring the iron solution *into* the diluted milk of magnesia a more voluminous magma will be obtained than by the reverse as directed in the United States Pharmacopœia VIII.

4. Milk of magnesia if properly prepared is practically free from carbonate, while magnesium oxide always contains some carbonate, excepting when recently calcined.

In conclusion I beg the pharmacists to keep the two solutions on hand, side by side, in separate bottles, ready for immediate use. Very fortunately we are not called upon to dispense or administer this antidote very often, but when it does happen, for instance, during the summer when the water from the poison fly paper finds its way into the stomach, then every minute is precious. Last of all, it seems to me an actual necessity that the United States Pharmacopœia should contain other antidotes besides this one similar to the Netherlands Pharmacopœia. Every pharmacist knows that in cases of poisoning the public run to the nearest drug store and many lives would be saved by having a table of antidotes in the United States Pharmacopœia, a copy of which standard according to the law must be on hand in every pharmacy and drug store.

ADULTERATED CUBEBS.

E. M. HOLMES, F. L. S.

The difficulty that has recently occurred in connection with oil of cubebs is due to the admixture in varying quantity of a poisonous variety of cubebs known in Java as *Rinoe badak*, which is, unfortunately, regarded in that island as a form of the genuine drug. So far as general appearance is concerned, as well as internal structure, a close similarity obtains between the genuine and false; but as in other plants, such as in the bitter and sweet almond, or as in the bitter and sweet cassava, a poisonous variety may closely resemble a harmless one. There are, however, two characters by which this poisonous variety of cubebs may be recognized. These are that it possesses a distinct odor and flavor of mace, and that it gives a yellowish brown color when a fruit is crushed and strong sulphuric acid (specific gravity, 1.843) is dropped upon it on a white saucer. The genuine cubebs give a *rosy crimson color* under these circumstances in all its varieties, of which there are several, distinguished by microscopic characters.

The mace-like odor is most easily recognized if some of the cubebs are enclosed for a time in a bottle or tin canister. The sulphuric acid test should be applied to several different looking fruits picked out of any given sample, as the fruits are often mixed, and the amount of adulteration or admixture can only be estimated in this way.

The genuine cubeb fruits vary to a small degree in size and in external appearance, so that a summary of the characters thus presented may prove useful.

GENUINE CUBEBS.

	Fruit	Stalks
	m.m. long	m.m. long
<i>Piper cubeba</i> var. <i>katoentjar</i> (narrow leaf).....	5	5
" " (broad leaf).....	5	5
var. from Purwedjo.....	5	5
" " Kediri	5	6
" " Malang	4	5
var. <i>tjaroeboek</i>	4-5	9

All these varieties may be regarded as genuine cubebs, although they differ slightly from each other in microscopical characters. The var. *tjaroeboek*, which is the name given in Java to the long-stalked true cubebs, is generally mixed with the typical shorter-stalked form, and is only recognizable by the length of the stalk, as it also gives the crimson reaction like the others.

All the above varieties of *Piper cubeba* are recognized by their size, the characteristic flavor, and the regular length of stalk, which is uniform for each variety, and by the blackish color, with a trace of bluish tint.

FALSE CUBEBS.

Six of these belong to the genus *Piper*, and have the same structure as cubebs, but differ in size and microscopic characters. They are as follows:

	Fruit	Stalk
	m.m. long	m.m. long
<i>Piper Cubeba</i> , var. <i>badak</i>	5	5
" <i>ribesioides</i> , Wall	5	7
" <i>crassipes</i> , Korth.....	6	10-13
" <i>lowong</i> , Blume.....	6	6¼
" <i>venosum</i> , C. D. Cr.....	6-7	12-14
" <i>mollissimum</i> , Blume.....	13	17

None of these false cubebs give the crimson coloration with sulphuric acid.

The var. *badak* has a greyish tint and a mace-like odor and taste. The *P. ribesioides* a brownish tint and but little pungency. The *P. crassipes* are larger, black, have a cajuput flavor and a bitter taste, and are depressed where the fruit joins the stalk, which is generally curved.

The *P. lowong* has a short stalk, flattened and curved at the free end. *P. venosum* has an oval shape, and a long stalk, and *P. mollissimum* is twice as large as ordinary cubebs; they are known as Keboe Cubebs in Java, and are rarely exported mixed with other cubebs. The *P. ribesioides* also come as a distinct importation from Perak, and are rarely mixed with the true cubebs. The other false cubebs are readily detected by being free from any stalk and having a different

character internally. In true cubebs the seed inside is formed of a solid mass with a minute embryo at the apex.

Three other false cubebs belong to other natural orders, and may be distinguished as follows:

1. *Tetranthera citrata*, one seed with two seed lobes.
2. *Bridelia tomentosa*, two-seeded.
3. *Rhamnus species*, three-seeded.

In *Tetranthera citrata* the embryo of the seed consists of two seed lobes, which fill the fruit, but easily separate, and have a lemony taste. In *Bridelia tomentosa*, the fruit is seen externally to consist of two cells, and when cut open each cell is seen to contain one seed. In *Rhamnus* the fruit is externally three-celled, and when cut open is seen to contain three small stones with a seed in each. These are collected in Java, and mixed with the genuine in scarce seasons. The false cubebs, except the *rinoe badak*, are not known to be poisonous.

The frequent rise in price of cubebs appears to be partly due not only to the occasional failure of the harvest, but to the fact that in new plantations it is not possible, until the plants have flowered, to distinguish between male or sterile, and female or fruit-bearing plants, and disappointment in this respect leads to the demolishing of the plantations and growing other produce instead of cubebs, and collecting wild cubebs such as the five kinds mentioned above, besides the *Rinoe badak*, which is included in the cultivated varieties. The adulteration with other fruits probably takes place when the crop is a poor one.

SUMMARY OF MICROSCOPIC CHARACTERS.

The following analysis of microscopic characters has been prepared by Mr. J. Small, Ph. C., and may be found of use to analysts who need exact data for legal or trade purposes. The species not easily distinguished by external appearance are here given:

I.—Cubebs giving red reaction with H_2SO_4 —

1. (a) *Rinoe katoentjar* (narrow leaf):

Stone cell of epicarp.—Average length 23.2 microns, greatest length 30.8 microns.

Stone cell of endocarp.—Two rows of isodiametric cells with large open lumen.

- (b) *Rinoe katoentjar* (broad leaf):—

Stone cells of epicarp.—Average length 30 microns, greatest length 46.2 microns. Average width of lumen 3 microns, greatest width 10 microns.

Sclerenchyma of endocarp.—One row of radically elongated cells. Average length 77 microns, greatest length 92.4 microns.

3. *Piper Cubeba* from Djokjokarta:

Sclerenchyma of endocarp.—One row of radically elongated cells. Average length 107.8 microns, greatest length 130.9 microns.

3. *Piper Cubeba* from Djokokarta:

Hypodermis present.

Scattered stone cells in inner parenchyma in sections from lower half of fruit.

Stone cells of endocarp in one to two rows.

Inner row continuous, cells radially elongated, isodiametric.

Outer row interrupted; cells tangentially elongated.

4. *Piper Cubeba* from Kediri:

Scattered tangentially elongated cells in inner parenchyma.
Stone cells of endocarp in one or two rows.
Inner row continuous, cells radially elongated.
Outer row interrupted, cells isodiametric.

5. *Piper Cubeba* from Malang:

Stone cells of epicarp large with open lumen.
Inner layer of endocarp. (One row of isodiametric stone cells interrupted by thin-walled cells.)

II.—Cubebis giving brownish yellow reaction with H_2SO_4 —1. (a) *Rinoe badak*. Type 1:

Stone cells of epicarp.—Average length 30.8 microns, greatest length 46.2 microns. Average width of lumen 10 microns.

Scattered stone cells in inner parenchyma, in sections from lower half of fruit.

Stone cells of endocarp in one to three rows.

Inner row continuous, cells isodiametric; outer row interrupted, cells radially elongated.

(b) *Rinoe badak*, Type 2:

Stone cells of epicarp in one or two rows.

Average length 38.6 microns, greatest length 46.2 microns.

Average width of lumen 15.4 microns, greatest width 23.2 microns.

Stone cells of endocarp in one or two rows.

Inner row continuous, cells radially elongated.

Average length 107.8 microns, greatest length 123.2 microns.

Outer row much interrupted, cells isodiametric.

2. *Piper ribesioides*:

Groups of stone cells in outer parenchyma.

Lacunae in compressed tissue. Tangentially elongated cells in outer edge of lacunae.

Scattered stone cells in inner parenchyma in sections from lower half of fruit.

Stone cells of endocarp isodiametric and tangentially elongated in two to four rows.

3. Large, long-stalked False Cubebis (*Piper crassipes?*):

Groups of stone cells in outer parenchyma.

No lacunae.

Scattered stone cells in inner parenchyma in sections from lower half of fruit.

Stone cells of endocarp isodiametric or tangentially elongated in two to four rows.

Papers Presented to Local Branches

PEROXIDE PRODUCTION, PAST AND PRESENT.*

J. S. BREWER, PHAR. D.

A vast amount of literature exists relating to peroxide of hydrogen, or hydrogen dioxide. It has for many years been one of the foremost topics of discussion among scientific men in both chemical and medical circles. It has formed the subject of conversation at meetings of chemical societies and other learned bodies. It presents, nevertheless, at all times a deeply interesting subject for study and discussion.

Its peculiar properties, its instability and its production has long been a puzzle to some of our best scientific men, particularly those who have endeavored to produce a permanent medicinal solution for commercial purposes. Hours, days, months and even years have been spent in experimenting. Thousands of dollars and even life and limb have been sacrificed to produce the present-day product, conforming to the requirements of the United States Pharmacopœia. The modern preparation falls far short of the ideal, although it is placed in the hands of the consumer in such a form as to meet the average requirements.

HISTORICAL.

The chemical union of two atoms of hydrogen and two atoms of oxygen was first effected and established as a definite chemical body by Thenard in 1818. A curious fact in this connection is that the experiment at that time was conducted with the use of dilute acids and barium dioxide in the presence of water, the same agents which are used today for the manufacture of peroxide.

Peroxide of hydrogen is said to occur in minute quantities and may be formed in the presence of water, by the oxidation of such substances as bismuth, cadmium, copper, phosphorous, zinc, tin, turpentine and some few essential oils. It has been pointed out that it is produced in certain metabolic processes of chlorophyll-bearing plants. For many years after its discovery, peroxide of hydrogen was considered a chemical curiosity, and it was not until the year 1856 that its value as a medicinal agent was presented to the world by B. W. Richardson, who found it to be a valuable remedial agent.

Regnault, Stædel and Kennedy were other experimenters who succeeded in producing peroxide in a more or less pure state. Passing over the only partially successful efforts of some of the best known chemists to produce a successful marketable solution, let us observe the patience and persevering efforts of the first really successful manufacturer in America. This man became deeply interested in the chemical possibilities of this article and knowing that if a permanent and

*Read at the Summer Meeting of the Northwestern Branch of the A. Ph. A., at Winona, Minn., June 19, 1912.

stable product could be produced a fortune awaited him, he worked for more than two years before he was able to manufacture the first successful quantity to offer the public. In all his experiments he worked along the lines of the first discoverer, using barium peroxide and dilute acids. Beginning with very small quantities and shaking the acids and barium together with water in a loosely stoppered bottle, he obtained sufficient encouragement to warrant his operating upon larger quantities in a wooden tub made from an old wine barrel. In this experiment lumps of ice were always kept in the mixture and the whole agitated with a wooden paddle. Attempt after attempt failed to bring the mixture up to the requisite strength and permanency. The reaction progressing rather slowly, each trial occupied the better part of a day and, while this patient experimenter often worked until a late hour at night, the batch had to be left to settle until morning before the actual result could be obtained.

It is recorded by friends of this man that he became fascinated with the work he had undertaken. He scarcely took time to eat or sleep. Each morning after the previous day's effort, at an early hour he would seek the place of his operations and with a shaking hand insert the key in the lock of the outside door. One glance in the tub in which he performed the test and he would find that he had not yet obtained the desired result. Like many other experimenters he was determined, but he had become, after several months of fruitless endeavor, somewhat discouraged. One morning he came eagerly to look at the batch of the preceeding day and the condition of the contents of the tub produced a new encouragement. A quick test assured him that his optimism was well founded. He had at last made a batch that came up to the desired strength. This point signaled the beginning of successful peroxide manufacture in America.

Reviewing the hardships and disasters of the first year of this man's business, it is pleasant to recall that in after years he built up a splendid business and reputation for his product, secured a considerable competence and retired to enjoy the fruits of his labors. It is an interesting fact that this manufacturer continued for several years to place his product on the market without a competitor. It was principally through his efforts that the medical profession was educated in the uses of peroxide, and the layman given a knowledge of its value as a household article.

A rather amusing story is told by a friend of this manufacturer who was familiar with the early undertakings and work of this man and who often dined with him and talked over his peroxide difficulties. In the later years of peroxide manufacture many new brands were coming into the market, which fact naturally did not please the first producer. Immediately a new product came into existence, and an original bottle was purchased by this manufacturer and placed with his own and others on a convenient table by his desk. Upon the occasion of a visit from the friend on a hot summer's day and during the course of an earnest conversation, a cork popped from one of the bottles on the table with as much noise as might accompany the drawing of a cork from a champagne bottle. The mighty peroxide manufacturer almost leaped from his chair and turning to his stenographer inquired, "What brand was that?" The stenographer replied, "That was yours sir." Settling back in his chair, the manufacturer said to the friend, "That shows the others are no good."

Since that time the popping of corks has gone merrily on more or less in connection with each brand manufactured.

For several years this first manufacturer was the only one to produce medicinal peroxide and market it, and for several years more he had only one competitor. This competitor's product gained rapidly in popularity by reason of its more stable character as it contained a preservative which through all the years has proven to be the most satisfactory, namely, Acetanilid.

PROCESS OF MANUFACTURE.

The chemicals employed to produce the now well-known solution of peroxide are the basic substance, barium dioxide, various acids and water. The acids which have been used are phosphoric, hydrochloric, sulphuric, oxalic, hydrofluoric. Experience has demonstrated that the most satisfactory acids for the manufacture of the medicinal article are the phosphoric and sulphuric, and the best products today are made with these two acids. Barium peroxide is produced by heating barium oxide, BaO , to a high temperature with access of air. The tremendous heat causes it to take up oxygen forming the dioxide. The barium dioxide of commerce may be classed under two general headings, the German and the English. The English product is considered superior by manufacturers of peroxide on account of its better settling properties, besides it is known to give a better yield. The German barium is much more difficult to work, it forms a light and difficult to settle precipitate and manufacturers generally endeavor to secure the English product for the manufacture of their preparation. The Pharmacopœia in 1890 gave a process for preparing peroxide of hydrogen, and for a type of pure peroxide the components of this formula can hardly be surpassed. The U. S. P. process with slight modifications was for years and is even now used by one or two manufacturers, but the expense of this process prohibits its use on a large scale, as it costs nearly twice as much as the sulphuric acid process followed today. Experience with both processes has taught that undeniably a peroxide made by the action of phosphoric acid on barium dioxide is the purest and best keeping product. Were I a physician I would endeavor to secure the peroxide made with these ingredients for use in my practice.

For those who would prepare a high grade solution of peroxide in a small way the following outline of the barium and phosphoric acid process may be interesting:

Fifteen pounds of barium dioxide are placed in a wooden or stone vessel and washed successively five or six times with separate portions of clean water. The barium is allowed to settle after being agitated five or ten minutes with each portion of water and this wash-water is decanted off and thrown away. This removes soluble impurities such as chlorides, etc. The wash-water from the previous batch is placed in another wooden or stone vessel, all of the phosphoric acid is added, several large lumps of ice are introduced and two or three pounds of the washed barium also added; the mixture is then stirred slowly with a wooden paddle or mechanical agitator for a period of from four to five hours, care being taken to regulate the temperature by the addition of lumps of ice from time to time. The balance of the barium is added in small quantities every half hour until all has been introduced. The reaction is carefully watched during the latter part of the stirring by introducing a piece of litmus paper into the solution. When the solution has

reached a neutral point, or has become very slightly alkaline, agitation is stopped, the lumps of ice removed and the precipitate allowed to settle. This requires about fifteen minutes. The clear supernatant liquid is then removed by decantation and a quantity of wash water from a previous batch is added to the sediment left in the tub. This wash water is really dilute hydrogen peroxide and contains a certain amount of free acid. The contents of the tub are again stirred briskly for a period varying from one hour to one and one-half hours. Ice is added as in the previous treatment and when the mixture again becomes slightly alkaline it is permitted to settle and the clear solution decanted off as before, the two decantations being mixed together. The solution obtained in this manner will have a strength varying from 3.4 per cent to 3.8 per cent. This should be carefully diluted to 3.1 per cent, a sufficient quantity of chemically pure sulphuric acid added to make the product slightly acid and to precipitate the barium in solution as barium sulphate. The acetanilid is also added at this time and allowed to dissolve in the solution. The resultant product may then be filtered or the precipitate allowed to settle and the clear peroxide decanted off.

To the sediment in the tub is now added about ten gallons of pure water, the mixture stirred for about one hour, allowed to settle and the clear liquid decanted off. The sediment is then treated the second time with about seven gallons of water in the same manner, the clear liquid being poured off at the end and mixed with the first decantation. This forms the wash water for the next batch.

Peroxide manufacture has long been regarded as a secret by those who have not had the privilege of observing its production. This idea is rather falacious inasmuch as it is really a very simple process, it being only a formula of proper proportions and careful manipulation. The above process will answer admirably for those who desire to operate on a small scale, and produce a superior and permanent solution of hydrogen dioxide. The best known manufacturers of today, however, are compelled, in order to operate on a profitable basis, to follow the hot process or the sulphuric acid process on a large scale. No ice is used in this method and during the manipulation the temperature rises so that the mixture at times becomes hot enough to produce steam. The operation is carried on in large wooden vats which hold as much as one thousand gallons each in the larger plants. By this process the manufacturer can turn out a product costing about twenty-five cents per gallon which is quite satisfactory. Even at this low cost of production the profits accruing to the producer are extremely meagre. One can readily see that when a gross of one-quarter pound bottles are sold as low as \$5.50 per gross, there is very little left for the manufacturer after the cost of the material, bottles, corks, labels, wrappers, packing case, finishing labor and selling expense are deducted. More peroxide manufacturers have entered into and gone out of this business during the last ten years than are now in existence.

CONSUMPTION OF MEDICINAL PEROXIDE.

The actual amount of peroxide consumed in America each year is enormous, and is hard to appreciate until we recall the fact that there are in the United States over one hundred factories which manufacture this article. The output of each one of these factories varies from fifty to a thousand gallons a day and in several instances even more. The increase in the sale of peroxide during the last ten years

has been phenomenal. It is said that one department store alone in New York City sells nearly three-quarters of a ton each day during the summer season; there are other department stores selling in proportion to their size in all the large cities of the United States. Add to this the still greater output of the combined druggists of the United States, the five and ten cent stores, general stores, etc., and we have a tremendous quantity, the exact amount of which would be difficult to even estimate, as manufacturers will not give out truthful statements regarding their yearly production. The manner in which this tremendous business has been created, the part which the druggist, the chemist, the physician, the surgeon and the manufacturer has played in educating the public to see and to recognize the value of this really wonderful preparation would occupy many hours in the description and fill many volumes in type. Suffice it to say that the intelligent person of today rushes for the peroxide bottle for every minor ailment or accident, and it is needless to add that Peroxide of Hydrogen deserves the popularity it has attained by reason of its ready activity, its harmless action on healthy tissue and its great prophylactic power.

PROPERTIES.

Peroxide of Hydrogen in a pure state is a thick, colorless liquid having a specific gravity of 1.499, and boils at 69 degrees under a pressure of 26 millimeters. It has a color much darker than the blue color of water. It is reasonably stable at an ordinary temperature, but when heated to 60 degrees or over it explodes with considerable violence. Impurities decompose it rapidly. It oxidizes organic matter with such rapidity that the reaction is often accompanied by a flame. Particles of dust, metals in a finely sub-divided state decompose it with extreme violence. At a low temperature crystals of pure peroxide are formed. By freezing much of the water may be separated from the peroxide; by distilling in vacuo solutions may be increased in strength to as much as 100 per cent. A well known 25 per cent solution is made by distillation and admixture with ether. Distillation of peroxide is an extremely hazardous undertaking and should be conducted with great caution. The presence of the faintest trace of foreign matter may cause an explosion; the whole breaking up into oxygen gas and water. Loss of life and limb mark the attempts that have been made in the past to perform this operation. The ordinary 3 per cent solution of the market, however, may be made with comparative safety, providing its generation is not attempted in a closed vessel. This aqueous solution contains a certain percentage of free acid usually sulphuric, and possibly various preservatives such as acetanilid, boric acid, salicylic acid, sodium salicylate, alcohol, glycerine, caffeine, sodium benzoate, salol, benzoic acid, boroglyceride, sodium chloride, etc.

Some manufacturers keep the solution strongly acid throughout the process and at the end neutralize the acidity with barium hydrate, but the most careful manipulators bring the product to a neutral and slightly alkaline point with barium dioxide at the end, the latter process being considered the best, and producing the most satisfactory results. Peroxide changes odor and flavor of most volatile oils. Those which are not affected are: Oil of eucalyptus, oils of pine, oil of star aniseed, anethol, oil of aniseed, borynlacetate, eucalyptol, thymol.

METHODS OF CLARIFYING.

On a large scale the best method is by settling. If left undisturbed in large vats for four or five days the precipitate, usually of barium sulphate, will settle to the bottom of the tank and the clean solution may be syphoned off. Another method is by pressure filtration with a filter press made of wooden frames. Gravity filtration through filter pulp is also employed. The centrifuge is also used by one or two manufacturers; this, however, only removes the bulk of the precipitate, and is usually employed for separating the large bulk of the precipitate in the process of the manufacture. The liquid must be passed through paper after this for complete clarification.

IMPURITIES.

The most likely impurity in peroxide is barium. This will not be found, however, if sulphuric acid is present in a sufficient quantity, as this will have removed any barium that may have gone into the solution. Arsenic may be found in minute quantities. This usually comes from using a cheap sulphuric acid. Hydrochloric acid, however, may be present, but hydrofluoric acid is seldom present in the medicinal solution.

PRESERVATIVES OF PEROXIDE.

The most common preservatives for peroxide is acetanilid. For many years this article was used by one or two manufacturers and its employment jealously guarded as a secret. It was some time before it became generally recognized by chemists, that the reason some brands kept better than others was on account of the preservative used. Many of these chemists, in analyzing various brands, overlooked acetanilid because this article is not recognized as a preservative. Others made the mistake of examining too small a quantity. By the concentration of four ounces or less a very minute quantity of material is obtained to work upon. The first disinterested chemist to discover acetanilid in a brand of peroxide concentrated one gallon of the solution. The presence of acetanilid was determined rather by accident than by any prearranged system of examination. This man was perhaps more surprised to find acetanilid present than was the first man who used it to discover that it was a good preservative for peroxide. Only by repeated tests and the checking of results, did he finally convince himself that he had found acetanilid. When it became known that acetanilid was a preservative, it was an easy matter to extract it from a solution of peroxide by shaking it out with ether, and chlorform, evaporating off the solvent at a low temperature. This procedure will remove about 95 per cent of the amount present. The proportion of this article which has been found to give the best results is about one-fifth of a grain per fluid ounce. Since the introduction of the Foods and Drugs Act, the manufacturers using acetanilid have been compelled to designate its presence on the label, but before that time the secret of its use by the first manufacturer was stolen by an assistant whose curiosity got the better of him when he observed his superior introduce a small weighed quantity of a white flaky crystalline substance into every batch at its completion. It is related that this assistant noted carefully the source of this unknown substance and watching for a favorable opportunity, abstracted a few ounces from its hiding

place and took it to an analytical chemist for analysis, carefully concealing the purpose for its identification. This assistant carried this secret to several new companies, several of which have since failed, greatly benefitting his personal assets thereby.

Thus the secret leaked out and some time before the Food and Drugs Act,, at least a dozen manufacturers were using it.

Kebler reports that many samples free from acetanilid have been known to develop an odor of aldehyde upon standing some length of time, indicating the presence of alcohol. Distillation, however, fails to give positive results with the iodiform tests. By testing a sample direct affirmative results were obtained. The distillate gave the usual reaction for aldehyde with Tollen's reagent and with fushsin and sulphurous acid. Flourids have been noted in several samples in minute quantities. Boric acid has been found in one or two instances. Several samples which were examined by Kebler showed the presence of caffeine.

PACKING FOR SHIPMENT.

Many of the larger manufacturers put peroxide in barrels and ship to the bottler. New barrels are selected for this purpose with a thick coating on paraffin wax on the inside, as contact with wood for any length of time decomposes the solution. It is also shipped in ten-gallon carboys and, of course, glass bottles of various sizes. In view of the low price at which peroxide is now sold, one of the bottlers' greatest difficulties is filling. As no metal of any description should come in contact with it, it follows that only glass and rubber can be utilized and up to the present time no satisfactory bottling device has been produced to handle this article. Each manufacturer or bottler has had the experience of constructing a filling machine more or less complicated, usually at considerable expense, which failed to do the work as it was easily broken, the glass or rubber hose parts being too fragile. Most bottlers use a simple glass syphon or rubber hose, the rubber hose being preferable on account of its flexibility. Some fillers can operate a hose with each hand at the same time. Before the standard peroxide bottle came into general use, some ingenious persons immersed the bottles entirely in the solution, filling them full to the lip, afterwards removing them a placing them in a drain trough. By inserting a wooden tube in each bottle considerable solution was forced out which left sufficient space for the expansion of any gas that might be liberated; however, bottles now in use have too narrow a mouth for this procedure. One mechanic is now working on a hard rubber and wood device which the writer has seen and which promises to give fairly satisfactory results. It is needless to say that such a filling device will be a boon to the peroxide manufacturer. One peculiarity that confronts every first purchaser of peroxide is the fact that the bottles do not seem to be completely filled, and every seller must go through the patient explanation as to why this condition exists. Even in the best products a certain amount of gas is sure to escape and room must be left for expansion, otherwise the bottle will be fractured or the cork expelled.

CORKING THE BOTTLES.

Experience has proved that it is best to use XXX extra long corks: the better the cork the less liable the product is to decompose. A few manufacturers put a

thin coating of paraffin wax on these corks. This fills the pores and prevents the cork dust from getting into the solution. A poor grade of corks will invariably cause deterioration in peroxide solutions.

Some manufacturers wire the corks in the bottles. If a solution is properly made this is unnecessary. In fact, a bottle with a wired cork is to be regarded with suspicion, as the bottle is very apt to break, thus causing injury to any one handling it. Several accidents are on record caused by wired corks. A nurse in a large hospital in New York City on a warm day attempted to open a bottle of contract peroxide in which the cork was secured with a piece of muslin. The bottle exploded lacerating a hand with pieces of glass which had to be removed by a surgeon. The nurse being in poor health at the time contracted blood poisoning and only with the greatest difficulty was the hand saved from amputation. A pint bottle in the hands of another user burst at an inopportune moment, causing disfigurement of one side of the face and almost the loss of sight. Innumerable reports are on record of bottles breaking on the counters and in display cases in drug stores and other places of sale, breaking other bottles and causing damage to labels and wrappers of expensive goods.

One of the early manufacturers was compelled to originate a safety value stopper and these have been known to go off at unexpected moments with considerable force and noise. This ingenious device has probably prevented many explosions which might have been more or less serious. Glass manufacturers are today making bottles with a ridge within the neck of the bottle. After the corks are introduced they naturally swell and fill this crevice, overcoming any pressure from within.

A pure solution of peroxide without preservatives decreases in strength under ordinary conditions at an average rate of about seven-twelfths of a volume per month. Preservatives retard this decrease considerably. It is evident that a number of manufacturers believe that a solution of peroxide keeps best when strongly acid, as many brands are found to be above the U. S. P. standard in this respect. The Pharmacopœia allows for every 25 cc. of tenth-normal alkali, about 0.049 per cent in terms of sulphuric acid. Excessive acidity is unnecessary as a properly made solution will keep as well if only slightly acid. Care must be taken, however, to allow for any neutralization by the alkalinity of the glass bottles.

Decomposition of peroxide may be occasioned by the slightest trace of impurities. If a bottle of peroxide is stored upside down or in an inverted position, decomposition takes place more rapidly, as the solution comes in contact with the cork. Bright light and heat causes rapid loss of strength. Dozens and even gross quantities of solution have been known to decompose within a few hours when exposed to the sunlight in a show window. Some manufacturers have adopted a time limit label for their peroxide, thereby being able to trace its age. They place the limit at six or eight months. A solution properly made should keep for a period of six months and even after one year it should not be much below 3 per cent in strength. Some manufacturers place a batch number on every label and in case of complaint they are able to tell the exact age of the preparation. Some manufacturers who do not use acetanilid decry its use, pointing out the injurious affects of this article on the system and its heart depressing properties, etc., while other manufacturing agents who use this pre-

servative in its defense claim that acetanilid adds to the preservative action of peroxide. The small amount present, however, can hardly have any effect one way or the other and these arguments can only be regarded as advertising talking points. Samples of peroxide taken from the same batch, or bottled at the same time under the same conditions, stored in the same position and place and kept under the same restrictions regarding temperature, light, etc., will show a marked variation in keeping. The contents of one bottle will lose scarcely no strength, while another will deteriorate rapidly. The reason for this is hard to explain unless we attribute it to the action of the cork or possibly some particles of foreign matter left in the bottle after washing. This argument can hardly be sustained, however, as experiments show that the same phenomena takes place with peroxide stored in glass stoppered bottles previously washed with distilled water and alcohol and afterwards sterilized. It is possible that a variation in the composition of glass may have some decomposing influence.

CONCENTRATION OF PEROXIDE.

The ordinary 3 per cent solution may be concentrated in vacuum to as much as 100 per cent. It may be made to about 15 per cent by carefully concentrating on an open water bath, using as little heat as possible. This practice is frequently resorted to by dentists in their practice, where a powerful bleaching or cleansing action is desired extemporaneously.

Staedel has produced peroxide in pure crystalline form of 100 per cent purity, by solidifying a concentrated aqueous solution 95 per cent in strength in an ether carbonic freezing mixture. Explosive decomposition of the crystals took place immediately in contact with foreign matter. A 3 per cent solution of peroxide may be concentrated to as much as 50 per cent in strength by cautiously evaporating on water bath at a temperature of not over 60 degrees C. The solution becomes stronger by the evaporation of water as the water is driven off much faster than the oxygen can be liberated.

TESTING FOR STRENGTH.

Glycerin and boroglyceride affects the titration of peroxide with permanganate. The permanganate method is worthless if the peroxide is preserved with salicylic acid. Smith, after very exhaustive experiments, thinks the permanganate method of titration is worthless in the presence of organic substances. The thiosulphate method of estimating the strength of solutions of peroxide is the safest and best for all-around purposes, as it is unaffected by any of the ordinary preservatives. It is simple, rapid, and accurate and is based upon the fact that hydrogen dioxide liberates a definite quantity of iodine from iodides in acid solution.

USES.

Peroxide of Hydrogen was formerly thought to be valuable for diphtheria but subsequent experience has proved it to be valueless for this purpose. It is fearful and wonderful to observe the light in which the ordinary layman regards peroxide. It is used as a gargle in sore throats, as a mouth wash, for cuts, scratches, bites of insects, bruises, and even burns, although its employment for the latter use is questionable and is apt to do more harm than good. It is em-

ployed for disinfecting sick rooms, and for bleaching linen, removing stains, cleaning straw hats, bleaching feathers and last but not least for lightening the golden locks of the blonde. As a general prophylactic and antiseptic, peroxide of hydrogen offers the surest and best all-around agent. No other preparation will act so quickly without harm to the healthy tissue. Dentists, physicians and surgeons would at times find themselves greatly inconvenienced without its aid. Its supply of active oxygen gives it many superior qualities over bi-chloride of mercury, carbolic acid and various other antiseptics. It has been found that a one to twenty thousand solution is equivalent to a solution of carbolic acid sixty-six times as strong. In cheapness, freedom from caustic and poisonous properties it cannot be surpassed.

ODOR.

Peroxide of hydrogen when freshly made has a peculiar odor characteristic of no other preparation. On standing for several months products preserved with acetanilid sometimes develops a marked odor resembling nitro-benzol. La Wall obtained positive tests for aniline; he states that about four months were required for the development of this odor.

PEROXIDE IN COSMETICS AND OTHER TOILET PREPARATIONS.

Peroxide has come into considerable prominence as an addition to greaseless creams, which are marketed as peroxide creams. In making these creams, the solution is usually employed as the peroxides of various metals are rather coarsely powdered, and make the cream gritty. Peroxide creams are unsatisfactory as the peroxide rapidly decomposes after being combined with organic matter such as stearic acid. In addition to this most greaseless creams or peroxide creams are slightly alkaline which neutralizes the acidity of peroxide causing its rapid decomposition.

Peroxides of the metals such as calcium, magnesium, zinc, sodium, and strontium are much used in dental preparations. Their stability in dental pastes is questionable, but in powders they are of considerable value, only giving up their oxygen in the presence of moisture.

These metallic peroxides are employed in foot powders and deodorizing powders.

L. Gallois has found that repeated applications of peroxide to a hairy surface on the skin act as a depilatory, the hair first becoming brittle and breaking off.

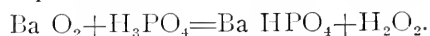
C. T. Tyrer considers hydrochloric acid the worst protective agent and phosphoric acid the best, glycerin coming second. Champagne, soda water and beer bottles with patent stoppers he finds the best for holding peroxide.

In treating a case of Rhus or ivy poisoning, peroxide was used. A white cloth bandage was wrapped about the wrist and kept wet with peroxide. The treatment was discontinued in the afternoon and the bandage removed before retiring. On the second day treatment of the patient was continued by moistening the bandage with several applications of peroxide in the morning. Several hours later an odor of burning cloths and a severe pain in the wrist directed the patient's attention to the bandage which was smoldering and already charred black in many places. Before it could be removed it had caused several burns on the wrist which required weeks to heal and left scars for several years. The probable

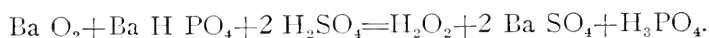
cause of this phenomenon was the presence of a slight amount of free sulphuric acid in the peroxide.

CHEMISTRY OF PEROXIDE.

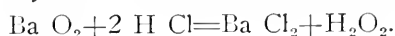
Peroxide of Hydrogen is produced by the action of dilute acide upon Barium Dioxide by which an exchange of atoms is effected. When manufactured with phosphoric acid the reaction takes places as follows:



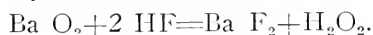
When sulphuric acid is used in conjunction with phosphoric a further reaction occurs:



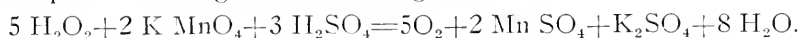
Hydrochloric acid reacts as follows:



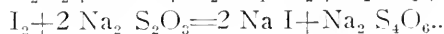
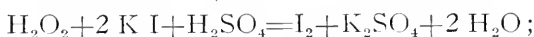
Hydrofluoric acid reacts on barium dioxide in the following manner:



The titrimetric estimation of peroxide with N/10 potassium permanganate takes place according to the following reaction:



Estimated with N/10 sodium thiosulphate the equation is as follows:



AS IT LOOKS TODAY.*

D. A. THOMPSON.

There is one subject which we should keep constantly in mind, for it is of the greatest importance to our business and profession, and that is, the tendency toward the continual lowering of retail prices. I think I am safe in saying that no other business or profession is so beset with this evil. Why should we be compelled to see our profits continually dwindling away to nothing, while the cost of doing business, instead of decreasing correspondingly, is continually on the increase? Our professional brothers, the physicians, have not had the slightest difficulty in advancing their fees 50 per cent., yet we are compelled continually to fight this tendency within our own ranks toward a lessening of the legitimate profits to which we are entitled and which are necessary to our existence. I have an old-fashioned notion that there should be a reason for everything done. Can anyone here tell us why our profession should be singled out from all others, and by its own members, as the one which must do business on a losing basis? That is to say—throw legitimate profits away—and I can speak advisedly on this

*Read at the Winona Meeting of the Northwestern Branch, June 19, 1912.

issue, feeling sure that my remarks are not subject to correction. Admitting as you will the absence of any profit in this method of merchandising, pray tell me, wherein lies the honor? The pharmacists of this country, as a consequence of demoralized price conditions, are compelled by a minority faction to give away profits to which they are entitled, and as a net result of all this we find the drug trade in these days of peaceful strife, sunk deep in the mire of destructive competition.

A very few farseeing and enterprising manufacturers (all honor to them) have succeeded in protecting the retail prices at which their products are sold, but others seem oblivious to the seriousness of the injury which continual cutting works on all branches of the trade. A long time observance has proven the retailer to be the one who suffers most. A chemical company, manufacturers of a high-grade ethical article, has recently put into execution a plan which provides for a new size package (to be retailed at 10 cents) which is never sold by the manufacturer, but which is given as a bonus to retailers who maintain the price on their product. I am pleased to be able to state that this plan, in consequence of being established on a *sound basis*, is already working out well, and I am sure it is to the best interests of all branches of the trade that it succeed. *The plan, to my way of thinking, is ideal, and deserves the hearty support of every retailer in America.* Would that more manufacturers had the courage and the good sense to do likewise.

While on this subject of price protection and profits worth while, I may be pardoned for referring to a very pleasant half-hour I recently spent with the general representative of a well-known eastern company, United States distributors of a popular proprietary. This company, by virtue of their having patented their process of manufacture, as well as the name of their product, are in a class by themselves and are in a position to successfully prevent any price cutting. In fact, the most arrogant and insolent of the price cutting gentry, countrywide, virtually eat out of the hand of this company. They are so earnest and honest—not wobbly—that all of us might well profit by their example. More power to this and other concerns of its kind.

To those who are deeply interested in the welfare of our profession and who are jealous of its dignity and high standing, it is regrettable that there should always be apparent a tendency toward a lowering of professional and business ideals. We should all strive to keep away from the Woolworth methods and keep our business and profession on the high plane on which it rightly belongs.

The mere fact that there are certain items in our stocks—though all too few—which carry a profit somewhat in keeping with the everpresent hazard and expense of the business, should not be made an excuse for the reckless handling over the counter of medicaments containing such agents as belladonna, in exchange for an elusive dime. A case in point—four dozen rhinitis tablets recently sold in Minneapolis for the magnificent sum of ten cents, accompanied by a volume of advice. To what a pass have we come, my friends of the profession!

The clarion call of Dean Vance, in his recent address to the alumni of the University of Minnesota Law Department, to higher standards for the legal profession, may well be heeded by the members of our profession. We must always

jealously guard its good name and high standing, striving always to raise ethical standards, and combatting any tendency toward lowering them.

Far be it from my intent to exaggerate the evils to which I refer, or lay undue stress on the shortcomings of our profession, but there are certain evils which it is impossible to overlook. In calling attention to them, I am not speaking of personal affairs, but taking a larger view of the profession as a whole, of which the growing number of thoughtful members are fully cognizant. Let each one do his share in bringing about improved conditions.

In closing, I wish to remind you that all the blame for prevailing trade evils should not be laid at the door of the retailer. All branches of the trade seem prone, at times, to be oblivious to the welfare of the trade as a whole, and to well settled plans, seemingly blinded by the prospect of immediate profits, regardless of results. As I have said on other occasions, I am confident that each of the three branches of the trade will yet contribute to the clearing up of the situation and the resultant betterment of conditions for all. However, I fear, unless we do something more than pass resolutions, that the attaining of the much desired better era will be a "slow and toilsome" process.

ARE YOUR INVESTMENTS PAYING DIVIDENDS?

The fact that you're paid so little for wages or profits is a pretty broad hint that it's up to you to hustle for more. It's up to you to study yourself, your business, your strong points and your weak points, with an eye to landing the bigger prizes that right at this very moment dangle just beyond your reach. Lying down and letting things slide won't help. You'll never draw a fatter pay envelope or a bigger dividend cheque if you relapse into a dull rut and merely wait for the day of Bigger Things. The day of Bigger Things never dawns for the chap who doesn't bounce out of bed bright and early and start footing it eastward to meet the dawn.

Whether you manage a store, or work for the man who manages the store, you're in business for yourself. Whether you travel on the road, or keep books, dig in sewers, plow fields or labor in a factory, you're in business for yourself.

Your business is to make the most of life—to do the biggest amount of good you can for your fellow men, and yourself. For, whatever your line, building a business isn't just taking in money for goods, and paying money out for goods. There is, in return for the frost-congealed cobalt which you lug into your till, the handling out of genuine service to other chaps on the same planet with you.

That's your business. Your life is the capital investment. Every day you spend on earth is an added share of paid up stock.

Do you, at the end of each day, pause to ask yourself: "Are my investments paying the dividends they should?"—*Victor Lauriston in The New Idea.*

National Association of Boards of Pharmacy

Ninth Annual Convention, Denver, August 19-24, 1912

THE PRESIDENT'S ADDRESS.

R. H. WALKER, GONZALES, TEX.

*Mr. Vice-President, Fellow Members and Associates of the National Association
Boards of Pharmacy:*

GENTLEMEN—The most fraternal greetings do I extend to all delegates and visitors here in this presence, at this, our Ninth Annual Meeting.

It is a most delightful privilege to preside over a convention composed of delegates, active or associate members, hailing from so many states. I count it a distinguished honor to view this body of professional men, who are all enlisted in a common cause, bound together by a single purpose, actuated by exalted motives, voicing the best thoughts and highest aims of a cultured, honorable calling, whose undivided energies are combined to build up and strengthen the profession of pharmacy throughout the United States.

As I look into the faces of this body of intelligent men, I am fully persuaded that the interests of our calling are duly safeguarded by sane minds and sturdy hands, and we may reasonably hope that much good may be accomplished; yea, an assured happening, resulting from the association of learned, strong-minded men, who are thoroughly in touch with the needs and demands of our profession. It is to such combinations, able advocates, zealous votaries and industrious workers, we are indebted for the progress we now enjoy.

No one will gainsay the vital and important truth, that there still remains unexplored valuable territory, which can be invaded and a greater degree of success attained. Let us reason together, interchange ideas, combined with brotherly love, honesty and friendly discussion, explore together the limitless fields of opportunity that encompass us, and who can prophecy or circumscribe the bounds of growth we may enjoy.

Speaking from personal feelings and experience, I confess I never felt more encouraged over the conditions that now exist. I am no prophet, nor the son of a prophet, yet I am constrained to hazard the hope that there is in the future a brighter and better day dawning, in the history of the National Association of Boards of Pharmacy, when our fondest hopes shall be realized, and every State Board shall become a faithful advocate, earnest devotee and swear unalterable allegiance to universal reciprocity.

I do not think I will suffer the charge of being a patron saint of the wildest school of enthusiasm when I say to you, that I confidently expect to live to see the day when universal reciprocity shall prevail. Not a reciprocity born of national legislation, or demands, but one established upon a wiser and firmer

foundation,—one which exists by virtue of the confiding faith prevailing between Boards and Board members, resulting from an intimate knowledge of the high standards of proficiency maintained, and insisted upon, by every State Board, with a due admixture of brotherly love, unalloyed charity and good will towards our fellow man. Among carpers and critics, the accusation will naturally follow that I am imaginative, and dealing in platitudes, and have not named the process to accomplish the desired end, viz., Universal Reciprocity. How can universal confidence—reciprocity—be established between the various Boards? Implicit, unswerving faith is the foundation of this edifice of universal reciprocity, and we would construct and so thoroughly equip this structure that there would be no storm of popular opinion that could ever prevail against, or effect its destruction.

The means to accomplish this end is found in the following prescription: Faithful daily application will insure restoration from selfishness and doubts and usher the patient into the new realms of joy, born of new conditions, viz., universal reciprocity.

First: Each member of the Boards of Pharmacy should be absolutely honest with himself.

Second: Be honest, sincere and true towards your brother-fellow-man.

Third: Be sincere, faithful and honest with the principles in the cause you have espoused, and the work engaged upon.

Fourth: Last, but not least, be sincere and faithful to the God who gives you existence.

Any State Board who will gauge their acts by these four principles, may they not hope to enjoy the reward that awaits the valiant soldier, whose life has been altogether directed by righteous acts, the dispensing of justice, combined with a due measure of charity?

I can faithfully assure you that Texas will be glad to honor the credentials from any State Board who have coined their licentiates by the four propositions laid down as premises, from which none other than a sane and honest conclusion can be deduced.

I had purposed to inaugurate a most vigorous campaign among the associate and non-members of our Association, but that cunning and adroit enemy of mankind, procrastination, with its siren song and convincing pleadings, persuaded me to defer my work until January 1, 1912, leading me to believe that I could then arrange my personal affairs in such a manner as to more conveniently and successfully do missionary work the last six months of my incumbency in office. But being overtaken with a physical ailment of the nose and head (from which I have not yet fully recovered), I was disabled, and my hopes shattered. I do not enter this plea as an excuse in extenuation of my failure to have accomplished more for this good cause, but simply recite this fact as a friendly warning to my successor, that he may not be likewise tempted.

I was moved by the spirit of my disappointment over having contributed so little towards the success of this meeting to write a circular letter, under date of July 4, 1912, containing the unlucky number of thirteen articles of faith, and mailed a copy to each member of every State Board, and I am delighted with the liberal responses received; the glad and cordial greetings extended to me have

persuaded me to be much encouraged over conditions prevailing. From the interest manifested I am tempted to the conviction that it is yet possible for the National Association of Boards of Pharmacy to boast over the fact that prospects are bright indeed for every State Board to become an active member, with peace and absolute harmony prevailing, all laboring with tolerance, faithfulness and joy, to that ultimate end, viz., thoroughly cultured, well educated pharmacists shall be the only products of all State Boards, made possible by the high standards of competency maintained.

Owing to a recent ruling of the Attorney General's Department of Texas, on the construction of Section 3 of our Pharmacy Law, reciting the fact that two years' experience provided for in this particular section, for all applicants who appear before our Board for examination, does not apply to graduates of reputable colleges of pharmacy, it became necessary that the State Board forthwith define what is intended and meant by the terms "Reputable College of Pharmacy." Therefore, the following resolution was passed by our Texas Board, and feeling that other states might be interested, I herewith submit same:

"Therefore, Be It Resolved, By the State Board of Pharmacy, now in called session, in the city of Austin, Texas, on this the seventeenth day of June, 1912:

"Any school or college of pharmacy to be considered reputable within the meaning of the Texas Pharmacy Law, shall employ at least four salaried teachers, for instruction in (a) Pharmacy, (b) Chemistry (including Organic, Inorganic, Medical and Analytical), (c) Botany and Pharmacognosy, (d) Materia Medica, (e) Toxicology and Posology, (f) Physics, (g) Prescription reading, writing and compounding, (h) Physiology and Bacteriology; provided further, that teachers of Chemistry, Pharmacy, Botany and Pharmacognosy shall devote at least one-half of their time to teaching.

(2) Each applicant for admission shall be required to present credit for eight units—seven required and one elective. The value of the unit to be the same as required for admission to the College of Arts of the University of Texas, on the following subjects:

REQUIRED UNITS.

English. Three units. To the extent taught in public schools.

English Grammar.....	One unit
English Composition.....	" "
English Rhetoric.....	" "

History. Two units. Any two units.

American	One unit
English	" "
French	" "
German	" "
Spanish	" "
Mexican	" "

Mathematics. Two units.

Higher Arithmetic.....	One unit
Algebra to Quadratics.....	" "
Plane Geometry.....	" "

ELECTIVE UNITS.

One unit *only*, to be selected from the following subjects, with value attached:

Languages.

German	One unit
French	" "
Spanish	" "
Latin	" "

Vocational Subjects.

Bookkeeping	One unit
Stenography	" "
Typewriting	" "
Domestic Science.....	" "
Drawing	" "

Science.

Civil Government.....	One-half unit
Physics	" "
Bacteriology	" "
Chemistry	One unit

In lieu of the above requirements, schools admitting without examination, the following parties, will also be considered reputable, to wit: Graduates of high schools, colleges and academies affiliated with the University of Texas; persons holding first-grade teachers' certificates; any one having been admitted upon examination, or otherwise, to any one of the departments of the University of Texas, A. & M. College, Baylor College or University, and students of other approved colleges and universities, and any one who has completed at least two years in one of the State Normal schools. All others must pass entrance examination, obtaining credit by such examination for eight units, upon subjects as above enumerated.

(3) The school or college shall only issue a diploma or confer a degree after attendance upon two sessions of not less than seven months, or twenty-four teaching weeks. Each student shall be required to attend at least 90 per cent. of all instruction given.

(4) The college or school of pharmacy shall have adequate laboratory equipment, so that each member of the class working in the laboratory of Chemistry, laboratory of Pharmacy and the Dispensing laboratory, may have the necessary equipment for individual work.

It shall also have a collection of crude drugs, for teaching Pharmacognosy, and such specimens of drugs as may be necessary for teaching Materia Medica.

The credentials for students admitted, laboratories, and teaching done, shall be open to inspection by members of the Texas Board of Pharmacy at any time during the session, and the Board may decide whether or not the laboratories are sufficiently well equipped for giving proper instruction, and proper standards are maintained.

(5) The amount of instruction given in the different subjects required for graduation shall not be less than the following, to wit:

	First Year	Second Year	Totals
Pharmacy Lectures	48	48	96
Materia Medica..... "	38	48	86
Botany "	48	00	48
Physics "	24	00	24
Chemistry "	48	96	144
Physiology "	Given in first or second year		25
Bacteriology "	Given in first or second year		9
Grand total first year.....			432

LABORATORY WORK.

	First Year	Second Year	Totals
Pharmacy	144 hrs.	166 hrs.	310 hrs.
Vegetable Microscopy.....	40 "	00 "	40 "
Pharmacognosy	48 "	72 "	120 "
Chemistry	96 "	168 "	264 "
Bacteriology	Given first or second year		56 "
Physiology	Given first or second year		60 "
Grand total for second year.....			850 "
Grand total for both years.....			1282 hrs.

NOTE—National Association of Boards of Pharmacy, through their Syllabus Committee, adopted:

Class A..... 500 first year; 500 second year.

Class B..... 500 first year; 600 second year.

1000

1100

Texas University has 850 first year, 1072 second year. Grand total of 1922, or one-third more than demanded by the Syllabus Committee.

Respectfully submitted for consideration by the State Board of Pharmacy.

R. H. WALKER, Secretary.

The National Association of Pharmacologists have issued a circular letter to all the State Boards, enclosing a resolution, which they propose to submit at this meeting of the National Association of Boards of Pharmacy, favorable to the adoption of the Universal Exchange or National Certificate, which will pass current in all the states of the Union. Each holder of such certificate is amenable to all the provisions of the Pharmacy Law in whatever state he may locate.

This is a subject that has commanded the attention of this Association before, and elicited a warm and enthusiastic debate, with negative results. Some of our past Presidents have made recommendations unfavorable to this proposition. I am unwilling to ignore a demand of this nature from the source from which it hails; therefore, I will not pass judgment upon the feasibility or practicality of this resolution, preferring that this Association allow a full and free consideration of the same, in order that its virtues and demerits may be thoroughly ventilated. Pardon me for the hint that I am emphatically grounded in the conviction that the great doctrine of States' Rights should not be amended or abridged. You know, from the geography of the country in which I reside, that I am born, wedded to this great principle. The regulation of the practice of Pharmacy is strictly a state's function, and I am apprehensive a national control, even though remote, would be unconstitutional. Then again, such a resolution, though meeting with popular favor by a majority of the delegates here assembled, would not be binding upon any active or associate member of this Association. Each state would be sovereign to accept or reject as, in its judgment, it deemed best. No reasonable objection can be urged against a free and liberal discussion of this resolution.

Every delegate present is most cordially requested to take an active part in all our proceedings, and urged to join in all discussions, for it is from the counsel of many that we are able to concrete our ideas into an acceptable whole. I most cheerfully submit the following recommendations for your consideration, and if they are not acceptable, or are contrary to your ideas of what is best, I will not feel grieved in the least if you decide to reject them, for surely the combined talent of all is far more valuable than the ideas and plans of any one man.

First. I would urge that due and courteous consideration be extended to the National Association of Pharmacologists, in the resolution they desire to present.

Second. The Secretary be directed to purchase suitable books in which to keep the records of this Association, as follows:

First: A ledger for accounts in detail with all the states.

Second: Cash book, with details of receipts and disbursements.

Third. The Secretary be authorized to purchase a loose-leaf ledger for the filing of applications of all active and associate members. Special application blanks shall be prepared, setting forth features of eligibility to membership, and said application shall be signed by the representative of said State Board, and approved by the President and Secretary of the National Association of Boards of Pharmacy, while in session. If application is made to the Secretary in interim, between meetings, said application shall be approved by President and Secretary and Executive Committee of the National Association of Boards of Pharmacy. After signature of the proper authorities to this application, made in interim, the Secretary shall notify each State Board of this action, so that all may be placed on authoritative notice of same. Each application filed for active or associate membership shall be accompanied by a copy of the last examination questions, held by said Board, which shall be kept in the archives of this Association, so that the Secretary may be able to intelligently answer all inquiries as to the nature of the work done by said state, in their examinations. This obviates the neces-

sity of any state refusing to reciprocate with any other state, for the reason of lack of knowledge of the quality of work they do. This would also eliminate the need of any state, who sought active membership, from opening up special negotiations with each state as to whether they were willing to reciprocate or not. They would avoid the embarrassing position of seeking information from the Secretary of the state in doubt, as they could get all the needed data from the Secretary of the National Association of Boards of Pharmacy. I would also urge that each application contain, in bold type, the question: "In becoming an active member, is your state willing to grant reciprocity to other active members of the National Association of Boards of Pharmacy? If not, state reasons for same, and possibility of curing these defects and objections to reciprocity." This would be an effective, safe means of insuring harmony, peace and good fellowship among active members. Have a copy of Constitution and By-Laws printed on the back of all application blanks.

Fourth. No state shall be admitted to active membership in the National Association of Boards of Pharmacy which does not demand the following as minimum requirements for registration as Pharmacist:

(A) Academic requirement of not less than eight university units, as follows: Seven required and one elective.

REQUIRED UNITS.	ELECTIVES.
<i>English.</i> Three units. To the extent taught in public schools.	One unit to be selected from the following lists
English Grammar.....One unit English Composition....." " English Rhetoric....." "	<i>Languages.</i> One year's work in German .....One unit French " " Spanish " " Latin " "
<i>History.</i> Two units. Any two units from this list.	<i>Vocational Subjects.</i> One year's study of Bookkeeping .....One unit Stenography " " Typewriting " " Domestic Science..... " " Drawing " "
American History. English History. French History. German History. Spanish History. Mexican History.	<i>Science.</i> Civil Government.....One-half unit Physics " " Bacteriology " " Chemistry .....One unit
<i>Mathematics.</i> Two units. Any two units from this list.	
Higher Arithmetic.....One unit Algebra to Quadratics....." " Plane Geometry....." "	

(B) Technical Education: In addition to requirements, as outlined under "A," such state must also examine applicants for pharmacist certificate on the following subjects as a minimum:

Pharmacy. Chemistry — Inorganic, Organic, Medical, Analytical. Materia Medica. Posology. Toxicology.	Prescription Reading, Writing, Compound- ing. Practical Pharmacy Work. Pharmacognosy—Covering drugs and chem- icals and pharmaceuticals of the U. S. P.
---	---

NOTE.—Texas has added Bacteriology and Physiology, with most flattering results and all the Texas schools have added these subjects to their regular course, requiring same for graduation; and Texas, almost as a unit, determined to modify its Pharmacy Law so as to require, in addition to the above, one year's work, successfully completed, in a reputable School of Pharmacy, as necessary to take the examination for Pharmacist certificate.

Fifth. That this Association give all possible encouragement to the Committees on Questions and Methods and Syllabus. I regard these two as the tie that binds—the life-blood of our Association.

Sixth. That some enlightened, well-informed brother explain to this Association how it is possible for some states to enter into interstate reciprocal relation with neighboring states, and positively decline to join this National Association of Boards of Pharmacy. I plead guilty of obtuseness and inability to conceive the consistency of such a position. I make this request in all kindness and sincerity, to be advised on this subject, for the contentions of some few states along this line is an engima to me.

Seventh. That each representative present at this convention take an active part in all discussions and questions that arise, for the reason that diversity of opinions is a valuable asset—one of the golden opportunities of convention life. If you have ideas, don't be too timid to express them, for it is possible that you may have the opportune solution of some vexatious problem, that would have continued in doubt, had it not been for your suggestion that disentangled the difficulties confronted.

Eighth. Would recommend that a committee of seven be elected by the Association at this meeting who shall prepare and submit a practical and feasible plan upon which reciprocity may be based, curing, as far as possible, the defects and points, so widely at variance, existing at present in the different state laws. In other words, I believe it is altogether possible for this Committee to devise a platform of *Reciprocity*, upon which most every State Board can stand and heartily subscribe to; amending, if necessary, the Pharmacy Laws of their respective states to conform to this universal platform, enabling them to join hands, with the majority, *upon common grounds*. If advisable, let the report of this Committee be incorporated into the Constitution and By-Laws of this Association, effective January 1, 1914, so that ample notice may be given each State Board and they can meet the demands, even if legislation be necessary.

To accomplish this end, I make the following suggestions for the guidance of this committee, which they may accept or reject, as in their wisdom they deem advisable.

1st. Let all State Boards have a separate examination for Assistant Pharmacists.

2d. All applicants for regular certificates must be 21 years of age and have had four years' experience, with due credit allowed for time expended at college (provided that applicant is a graduate of a reputable College of Pharmacy) before they are eligible to appear before the State Board of Pharmacy.

3d. That no diploma from any college, either at home or abroad, shall be recognized.

4th. That an academic education equivalent to seven required and one elective units be demanded as a qualification to appear before the State Board, and on January 1, 1916, it be required that each applicant shall hold a diploma of graduation from a high school of Group One of Texas, the equal of 14 Carnegie units. In 1920 it shall be demanded that each applicant shall be a high school graduate, together with diploma from a reputable College of Pharmacy.

5th. That each state shall examine each applicant in the following subjects, to wit:

Pharmacy; Chemistry, Inorganic, Organic, Medical, Analytical; Materia Medica; Posology; Toxicology; Prescriptions, Reading, Writing, Compounding; Pharmacognosy, covering Drug and Chemical and Pharmaceuticals of the U. S. P.

Following this outline, I firmly believe that we can successfully divorce and eliminate the commercial element from the professional demands of our calling and establish popular Standards of Reciprocity.

In conclusion: I feel that I have already trespassed upon your patience and charitable endurance. My heart and soul are in this work—I love it, and nothing so charms, interests or entertains me as the advancement of new ideas, novel methods, that will make the work of the State Boards of Pharmacy more efficient, and insure successful attainment of the ends desired, viz., a thorough test of real merit and true efficiency.

SMOKE TICKETS.

"I've always tried to boost my cigar sales by selling in box lots. I would argue the saving in price and at first I made a few sales, but invariably these men returned to their old habit of buying a half dollar's worth at a time. The box purchases hadn't proved a saving after all. When they bought in box lots they smoked more, gave away more and it really cost them more for smokes than it ever had before. That's what they all told me. So I decided I had been working on the wrong track and abandoned the quantity scheme.

"Still I wanted to get the cigar trade of the town and sell even more cigars than I was selling, so I kept hunting for a plan that would sell the quantities and yet be of real advantage to the consumer. Finally I found it—and I got the inspiration from a lunch counter. I noticed that a restaurant sold meal tickets for twenty-one meals at a reduced price. You paid for the twenty-one meals in advance and got a discount by so doing. It is an old scheme in the restaurant line, but it was new in the cigar business, and I grabbed at it immediately. I had smoke-tickets printed—fifty stars on the outer margin, green stars for the five-centers, red for the tens. Then I pointed out to the men who had told me their objections to the buy-a-box plan that they could now buy a box at the box price and leave it with me. They would simply bring along their tickets and get one cigar or a dozen as suited their fancy.

"This was a new one to all of them and the novelty of the plan combined with the saving has been a wonderful trade puller. I now sell three-quarters of the cigars smoked in this town and I'd rather sell them this way than by the box, because a customer comes in to the store every day for his daily supply and very often sees some other article that attracts his fancy and loosens his purse strings."—*Tobacco World*.

Reports of A. Ph. A. Committees

REPORT OF THE COMMITTEE ON THE PRESIDENT'S ADDRESS.

Your committee, to which was referred the address of the President, begs leave to report as follows:

The recommendation that the Association continue to bear its share of the expense of the publication of the Syllabus is approved, as the continuation of the work of the Syllabus Committee is a matter of prime importance to the cause of pharmaceutical education in every phase of which the American Pharmaceutical Association is deeply interested.

The recommendation that the Association undertake the publication of the Book of Recipes, of a popular character covering a wide range, is approved and the Council is recommended by the Committee to take the necessary steps to carry this recommendation into effect, due care being exercised in the compilation of the recipes so that they may prove uniformly reliable.

The recommendation that steps be taken to complete the organization of a National Legislative Conference is approved and your committee recommend that it be referred to the Section on Education and Legislation for further consideration.

The recommendation that an active campaign for members be continued is concurred in.

The suggestion of the President regarding the necessity for having all who dispense drugs in any way made amenable to the laws governing the traffic in drugs, is commended, and we recommend that the subject be referred to the Committee on Education and Legislation for further action.

The recommendation that the Association appoint delegates to the International Pharmaceutical Congress should, in our opinion, be referred to the Council for action.

The recommendation that the ceremony of installation of officers should be conducted in a manner more nearly commensurate with the dignity of the occasion is concurred in, and your committee recommends that the subject be referred to the Committee on Reorganization and Revision of the By-Laws.

In conclusion, your committee wish to commend the address of the President as a whole for its eminently sound, sane and conservative views, giving evidence as it does, of a careful and conscientious study of the needs of the organization and a sound judgment regarding the best methods of caring for those needs.

Respectfully,

F. W. MEISSNER, JR.,

A. V. PEASE,

OTTO F. CLAUS,

CASWELL A. MAYO,

JOHN C. WALLACE, Chairman.

REPORT OF THE COMMITTEE ON NATIONAL LEGISLATION.

W. S. RICHARDSON, CHAIRMAN.

At the time when it is necessary to prepare this report, Congress has not yet adjourned, nor has it thus far enacted a single bill of importance to this Association.

However, matters of great moment have transpired, and we shall attempt to briefly describe them in the following:

THE RICHARDSON BILL.

This bill was prepared at the suggestion of the President of the United States and in compliance with a demand from the general public for amendments to the Food and Drugs Act that would strengthen that Act in certain ways.

The chief objects sought were to prevent fraudulent or misleading statements in regard to the remedial properties of medicines, whether made in connection with the packages thereof, or through advertisements; to place under the control of the Act all mechanical and other appliances advertised and sold as possessing remedial powers, and to further restrict the sale of habit-forming drugs.

Of the several forms of the bill introduced all were involved, and contained provisions that were considered unnecessarily radical. However, it was generally understood early in the year that the Interstate Committee of the House would report the bill without granting any hearings thereon, and there seems to be no doubt that such would have been the case had it not been for protests from the various divisions of the drug trade.

LEGISLATIVE CONFERENCE.

At a time when it was still thought improbable that there would be any hearings on the Richardson bill, the Executive Committee of the N. A. R. D. had extended, through resolution, an invitation to this Association to join it in a legislative conference for the consideration of law-making matters in general. Before a date for such conference had been selected, the House Committee having the Richardson bill in charge announced hearings thereon, selecting a date hardly more than a week ahead.

After much wiring by the officials and committeemen of both associations, there were gathered in Washington on April 27, for conference to prepare for a special hearing on April 29, a majority of the members of the Legislative Committee of the N. A. R. D. and all of the members of the Legislative Committee of this Association except Professor Eberle, who, very naturally, found it impossible to journey from Texas to Washington on such short notice. Additionally, there were present Professor F. C. Nixon of Leominster, Mass., representing the State Pharmaceutical Association. Professor Nixon acted as secretary of the conference and rendered very great service. After arduous labor covering the greater part of two days, the conclusions of the conferees were presented to the Interstate

Committee of the House of Representatives, Special Attorney Frank H. Freericks of the N. A. R. D., acting as spokesman.

Mr. Freericks presented to the congressmen a clear outline of such a bill as the conferees felt that they could pledge the support of the members of their respective associations.

THE APPROVED BILL.

The conferees approved the sections concerning the proposed prohibition of false or misleading advertising, with some minor changes of phraseology.

They advocated a single pharmacopoeial standard for drugs and medicines, with certain restricted allowances when the labels clearly show that the drug is intended for technical purposes only.

The conferees disagreed with the suggestions of the original bill in regard to the list of drugs that should be considered as habit-forming, and be mentioned on the label, and suggested a much more restricted list.

The conferees also declined to approve certain tentative provisions looking to the control of the sales of morphine, opium, etc., believing that these provisions were of such nature as should be embodied in bills having for their purpose the procurement of legislation dealing exclusively with habit-forming drugs.

Contrary to expectations, up to the present time, no bill to amend the Food and Drugs Act has been reported. That amendments will be made ere long seems assured, for the need of them is something to which the consuming public as well as the pharmaceutical world is fully awake.

FUTURE LEGISLATIVE CONFERENCES.

It is indeed pleasant to record the harmonious result of this conference between the Legislative Committees of the two great associations, and to hope that like effectiveness may be had in future times. Never as during the year just closed has legislation loomed so large in pharmaceutical affairs, and as the importance of it grows, legislative committees must increase their labors and effectiveness. With this increase must naturally come a growth in cooperation between the various National associations. However, the very existence of the several associations proves the severality of their purposes. These purposes legislatively are such as to nourish cooperation so long as it does not tend to absorption. The membership qualifications of this association are so peculiar, so all-embracing, and yet primarily so professional, as to make it difficult for it to choose a restricted field for legislative initiative. And yet, expediency and effectiveness, and in the end, interassociation harmony may best be found by just such restricted initiative.

It seems to us that each National association should strengthen its Legislative Committee; that the personnel of each National Legislative Committee should be distinct from all the others; that each committee should take the initiative in legislative matters coming peculiarly within the sphere formed by its membership qualifications or constitutional purposes, and that legislative conferences, so far as they may be, should be for the purpose of finding a way to consistently add the moral support of one association to the active labor of another. More than this, we believe, may lead to lack of concentration, wasted effort, weakness, and ineffectiveness.

CONTROL OF HABIT-FORMING DRUGS.

The habit-forming drugs evil received much greater attention outside of than in the Richardson bill. Early in the year the Bureau of Chemistry, Department of Agriculture, formulated what was generally known as "The Tentative Ruling."

Through this it was sought to accomplish through an executive department something greatly resembling what had been attempted in legislation in what had been known as "the Foster bill" of the Sixty-first Congress.

The proposed plan included a system of recording, reporting and otherwise detailing transactions in habit-forming drugs. In this proposition the trade interests not only found many of the objectionable features of the Foster bill, but, additionally, it was declared that the tentative regulation represented an attempted usurpation of legislative power by an executive department; it was asserted that the proposed action was unconstitutional.

This tentative regulation was placed before the Secretaries of Agriculture, Treasury, and Commerce and Labor, as demanded by the law. It was by them returned to the officials of the bureau of chemistry for further information; again placed before the Secretaries, and at this writing it is still in their hands, with nothing to indicate what their ultimate action upon it may be.

THE WRIGHT-HARRISON BILLS.

In the latter part of the session Representative Harrison introduced three bills that had been prepared by Opium Commissioner Hamilton Wright, who was also author of and sponsor for the Foster bill. Later on, amended forms of two of the bills were introduced.

These are revenue measures under which all importers, manufacturers, wholesalers and retailers would be licensed and held to a certain system of stamping the goods and recording transactions therein. These bills are less objectionable than the Foster bill in so far as they eliminate from their detail working, compounds containing very small portions of the drugs with which they deal.

However, there are some who criticise these bills as lacking in definiteness in some particulars and as placing unnecessary hardships upon the trade.

The conditions surrounding habit-drug legislation are not by any means creditable to the trade and profession. The social demands of the public and the ethical demands of pharmacy are clear, but as to means of meeting these demands, the divergence of opinion grows greater instead of less. Meanwhile, the evil grows in national terror; it comes more and more into public thought and public print; brings greater undeserved contumely upon the retail pharmacist, and with the various interests most closely concerned as far from practical initiative as ever.

PARCELS-POST.

Although the postoffice appropriation bill has not at this writing become a law, it has been reported in such form as to show decisive progress in parcels-post legislation.

During the year the forces both for and against parcels-post drew their lines of battle closer together than ever before. The mercenary monopolistic influences still insist upon a flat rate, which, in effect, would have used the Government's revenues from other sources to wipe the small towns from the map of the country.

Happily, we had in our legislative and executive branches of government men who not only faced the problem absolutely without class bias, but with the technique of experts who had devoted years of study to it. They brought forth as the product of experience and common sense a system under which a distance charge would be made; the zone system.

An understanding of this system brought to the more intelligent small dealers a realization that in its chief features all their contentions were granted at least in part. It was at least a fair compromise, and, accepting the inevitability of some form of parcels-post, we should welcome the zone rate system and use our best efforts to make it constantly improve in impartial effectiveness.

PUBLIC HEALTH BILLS.

The Owen bill for a Department of Public Health was reported by the Senate Committee on Public Health and Quarantine. Other bills for similar purposes, to be effected in like manner or through enlarging the Marine Hospital Service, are in committees in both Senate and House. The report of the Owen bill brought forth some critical statements in the Senate itself, it being said that Senator Owen alone made the report.

While we believe that the health activities of the Government should, and inevitably will increase; while we are not opposed to the seeming purposes of the bill as reported, the matter has become one of so much public discussion of a disagreeable nature, so many school, creed and class passions have been awakened by it, that we feel justified in making no further recommendation at this time than that this Association remain neutral to avoid entanglements that might carry it beyond its constitutional province.

As none of the bills thus far presented give any recognition to pharmacy, we certainly cannot allay ourselves with any particular one of them.

PATENT LAWS REVISION.

After the sweeping decision of the Supreme Court, upholding the monopolistic rights of the patentee, there was much rumor of radical legislation immediately to come.

At this writing not a bill has been reported. It has been stated that one bill to limit the monopolistic power of the patentee over unpatented supplies to be used on patented apparatus, will be reported. However, this will be a mild measure and its passage at this session is questionable.

The much-discussed tentative change of laws regarding foreign-owned drug patents does not seem to be a matter for action at this time. All drug and pharmaceutical interests are united in demanding some form of lawful protection for profits. We are not in favor of unlimited competition in any line. We therefore cannot consistently recommend a loosening of the patent protective lines on one class of drug merchandise, and the tightening of the same nature of lines on other classes.

TARIFF.

As is generally known, the tariff work of the session has been controlled purely by partisan politics. We very greatly doubt that the bills introduced and passed

by the house would have ever seen the light of day if one party had been in control at both ends of the Capitol. However, had they been introduced by a party in full control, we doubt that they would have been treated in either Senate or White House as they were.

We are inclined to believe that tariffs are things that the retail pharmacist should not be expected to have technical mastery of. Such measures are peculiarly the affair of the importers, manufacturers, and wholesalers who are members of this Association.

ENLARGED OR ADDED COMMITTEES.

This matter of tariffs reminds us that a proper handling of legislative matters for so varied a membership should either have a much larger Legislative Committee, with representatives of all interests thereon, or there should be sub-committees to care for different sorts of legislation; as we now have a special committee for the matter of pharmacists in the government service.

LIQUOR LEGISLATION.

It may seem that the question of liquor control is less of a factor, in so far as a political party deals with it. However, as a broad economic issue it must be acknowledged that it is rapidly gaining in importance. State sovereignty as seemingly opposed by the interstate protection of liquor in transit presents a grave problem, and one that has, through expressions elicited by the Webb, Kenyon and other bills in the present Congress, indicated that it may awaken serious class, sectional and race antagonisms.

Until the matter grows into one of clearer National division this Association can hardly adopt any definite policy in connection therewith.

In so far as these bills bear upon the sale of alcohol for legitimate medicinal purposes, we believe that the fears expressed are groundless and that no bill will become a national law without having that feature properly handled.

THE SHERMAN LAW.

A bill to amend the Sherman law, and by so doing secure fair profit protection for the small dealers in all lines, was prepared by Mr. Frank H. Freericks, and introduced in the Senate by Senator Clapp of Minnesota.

For information in regard to this and other legislative matters that seem to come within the province of the N. A. R. D., we refer our members to the reports and literature of that association.

Your committee is appreciative of the interest shown in legislation by the membership in general; it is grateful for the intracommittee harmony that has prevailed, and it sincerely hopes that aside from the fruit of its own efforts, if such there may be, that it may have planted seed that will bear bountifully under the cultivation of its successors.

REPORT OF COMMITTEE ON DRUG REFORM.

L. E. SAYRE, CHAIRMAN.

The Committee on Drug Reform—reappointed to serve a third term—has done little more than clear the way for future work. A new Committee will, it is hoped, find itself in a favorable position to accomplish some definite results. The fact that nothing very tangible has been thus far accomplished, may seem cause for unfavorable criticism, but no public movement of any significance can take place without a preceding period of uncertainty and agitation. The time covered in preparation is often long when compared with that needed for the final action; when general feeling has been aroused against an evil, reform is certain to follow, unless the evil be one so complicated that it baffles ordinary abilities. The evils against which your Committee on Drug Reform has been especially directed, though not simple by any means, do not present difficulties so complicated as to discourage action.

Of these evils, reference should be made to the one arising from the practice of those who are shielded in a great measure from the application of the law regulating drug standards. That the Dispensing Doctor is thus shielded in many ways, is no theory. One of this class was informed that a certain fluidextract of belladonna, gotten outside the state, which he was dispensing, was less than half alkaloidal strength. He replied that this article gave him satisfactory clinical results, and that was all he wanted; further, he had no use for the Pharmacopeia nor its standards. The State Food and Drug Commissioner when informed of this said, in substance, "It is very unfortunate, but the law does not require the physician's stock to be inspected—he is a law unto himself!" It may be said that this is an exceptional case, but those who have carefully studied existing conditions, think otherwise. Mr. C. F. Nixon, Leominster, Mass., in a recent report¹ states, "Physicians are dispensing enormous quantities of tablets, many of these are bought of houses of little responsibility and are of doubtful worth." In a recent issue of the American Druggist, reference is made to heroin tablets without heroin, morphine tablets without morphine, terpine hydrate elixir without any terpin hydrate, etc., being dispensed by physicians who are more careful of price than of the quality of drugs they buy. However, be they few or many who evade or disregard drug standards by virtue of their professional position, the condition referred to furnishes a loop-hole for the introduction of a sub-standard material, which practice your Committee, when first appointed, was especially commissioned to suggest means of reform.

The efforts of your Committee during the past year have met, in the main, with cordial approval from both professions, pharmacy and medicine. Some critics, not being fully informed, have made the accusation that the Committee is attempting to create a monopoly for druggists as medical dispensers, but the absurdity of such a criticism is apparent to anyone familiar with the Committee's work. Another class of critics, who should not be ignored, state that the efforts of your Committee is an impudent attempt to interfere with the inherent

¹Merck's Report, July, 1902, p. 193.

rights of the physician. Nothing is further from the truth. Your chairman is quoting almost verbatim the words of an intelligent layman, when he says: "No one can appreciate more than I the inestimable value of the services of the physician; no one can have greater respect for him as a public servant, none would be less inclined to restrict him in this service. But human life has been specially guarded by a commendable law, which applies to dispensers of medicine. If the physician, in addition to his practice, assumes the role of dispenser, he should be subject to the law that controls the latter. Against incompetence, against adulterated, misbranded and deteriorated drugs the public claim protection, whoever be the dispenser." A few correspondents have grave doubts as to the good to be accomplished by such agitation, when no further plan for action has been thought out. It is hoped, however, that after the first steps of reform have been taken, and general interest aroused, a plan of action will emerge.

One of the most difficult criticisms your Committee has had to meet comes from prominent men high in office in our association. They say, in substance, "The druggists are to blame for conditions which have brought into existence the dispensing doctor. How many stores in the state of Kansas, for example, are legally conducted, or are fitted for compounding and dispensing? Are there not many small towns with two or three drug stores, and not one of them able to perform the simplest operation in pharmacy in the proper manner?" Your Committee would reply: "If conditions in our ranks are thus deplorable, then it is all the more urgent that the public correct these conditions. To permit them to spread through these seemingly favored in the medical profession, is to increase the number of law breakers, instead of diminishing them. What the public may recognize as deplorable in the ranks of the pharmacist, it does not condone in the ranks of the physician. The Committee has no attack to make upon any class, its assault is against a reprehensible practice, a practice that furnishes a loophole for the evasion of the Food and Drugs law as well as an opportunity to elude the application of the pharmacy laws of the different states. To combat the above conditions, reputable manufacturers, pharmacists and physicians, should join the public in any efforts any Committee of Reform should put forth.

Toward this end, the chairman of your Committee, sanctioned by its members, has endeavored to secure the cooperation of the pharmacists of his state, and of the pharmacists of this Association in other states. Circulars and letters have been sent, asking the following questions:

1. Do physicians of your acquaintance dispense their own medicines?
2. Do they buy full standard preparations and drugs, or mainly proprietary remedies?
3. Are their goods inspected as in drug stores?
4. From what houses do they buy?
5. What sized stocks do they carry?
6. To what extent are doctors selling drugs and medicines on a call not actually prescribed by them?
7. Would your doctors prefer to dispense or prescribe?
8. What steps would you advise for the betterment of the aforesaid conditions?

NOTE: That the public is served unwittingly by two standards is apparent to every one, when the law fails to provide for an inspection of the physician's drug stock. It is true that physicians may invite such inspection, but it is our desire to know how many physicians voluntarily give such an invitation.

9. Are your doctors in favor of, or opposed to the standardization law?

10. How are the physicians and druggists observing the spirit of the anti-narcotic law? Is the complaint of the former abusing their rights, and of the latter who are legally restricted, in dispensing morphine, cocaine, and narcotics to habitues, true?

11. To what extent are drugs and medicines sold in your town, by mail order houses and through clubs offering premiums?

12. Do other stores ever carry medicinal preparations of any kind? If so, what kind?

The material secured by answers to questions in circular letter, making up the burden of this report, was almost as varied as were the responses to Mr. C. M. Ford's article entitled "The Drug Store Crisis" (See Merck's Report, July, '12, p. 193). As these responses to Mr. Ford's rather pessimistic article have a bearing upon this subject of Drug Reform, they might profitably be read in connection with this report.

I shall take the liberty of summarizing the data collected in Kansas, reported at its State meeting, and condensing the 35 replies from other members of the Association in different parts of the country.

Number of replies in Kansas, 120.

Number of replies from outside, 35.

Different towns heard from in Kansas, 106.

Number of towns having prescribing physicians, 16.

Number of towns having dispensing physicians, 69.

Number of towns having both kinds, 28.

Of these, 12 towns report a majority dispensing; 14 report the minority dispensing and 2 report half and half.

Number of towns reporting no inspection of physicians' offices, 92.

Number of answers uncertain as to the inspection, 5.

Number of answers not knowing as to inspection, 5.

Number of those not answering this question, 18.

Almost all answers show that the physicians mostly buy from the various physicians' supply houses and chemical companies. Few only buy from well known drug houses and chemical manufacturing houses. Very few buy from the town druggists.

The size of stock carried ranges from \$100—\$300 as an average. Some are as low as \$50 and others as high as \$500 and \$1,000.

Few dispense on call.

29 towns report in favor of prescribing. 40 favor dispensing. 3 towns report their physicians expressing a desire to prescribe but still go on dispensing. 29 have some who favor dispensing and others who favor prescribing.

Almost all report their physicians favoring full standard.

The Anti-narcotic law is reported as being observed, almost universally.

In answer to the question "Do other stores ever carry medicinal preparations of any kind?" we find the following stores and clubs mentioned: Physicians' Supply Houses, Department Stores, Larkin Clubs, Ten Cent Stores, Itinerant Vendors, Feed Stores, etc.

A considerable majority of the physicians choose to do their own dispensing. There are two principal reasons for this decision on the part of the physician.

One is because he has lost confidence in the Pharmacist. The other has to do with a purely mercenary motive—the idea of commercial business which brings to him an added income. Under the guise of supplying something in which he has confidence, he is supplying something on which he can make a profit. The problem is touched upon in a paper read at a meeting of the Washington branch of the American Pharmaceutical Association in which the writer, W. A. Puckner, says:

"During recent years many physicians have been inclined to forsake their corner druggist, because he has been tried and too often found wanting, and have pinned their faith to pharmaceutical manufacturers and promoters of specialties and their detail men. Dependence on the specialty proprietors has, however, been disastrous—so disastrous that well informed men will have no more to do with the detail man. * * * * *

"I am convinced that physicians fully appreciate the help which pharmacists can give them, and it only remains for the individual pharmacist to go to the individual physician and demonstrate that he is the one that may be relied upon. This plan of procedure, I am sure, promises much good both for the pharmacist and the physician."

Information received in the course of this investigation leads to the conclusion that many of the doctors who do their own dispensing do so, not out of choice, but because others in the profession dispense. Though willing to give up that part of their practice, these physicians are not able to change the custom unless all doctors join with them in doing so. A law which would give these unwilling dispensing doctors support in their ideas, would probably bring about an alleviation of the present trouble.

If all physicians were convinced of the desirability of this reform, then a suggestion merely as to the desirability would be sufficient to assume accomplishment. But the fact that mere suggestion fails to bring about the end sought by those who recognize the necessity of improving conditions, shows that there are those who can be moved to reform only by the strong arm of the law.

Excerpts from the more lengthy letters are subjoined. Our local Secretary, C. M. Ford, has favored us with the following:

"I have in mind the list of queries from the Committee on Drug Reform aimed at the dispensing doctor evil. There is such an evil. It concerns the general public, and is not a matter for the pharmacists alone to become alarmed over. The dispensing doctor should be required to write and file his prescriptions. He should not be allowed to write a death certificate except jointly with another physician. If no other physician is called in and the patient dies while under the treatment of a dispensing doctor, the law should require an autopsy. * * * * *

"Your committee should see that the iniquitous and absurd provision found in many state laws which permits the unrestricted compounding of 'patent' or package medicines be eliminated. These persons who compound these medicines as well as those who dispense them, should be registered pharmacists and their stocks and premises regularly inspected. Without a federal law prohibiting this patent trash in interstate commerce, state laws would not avail."

In connection with Mr. Ford's letter we would call attention to the growth of what may be termed mail order practice.

"Circulars and circular letters, typewritten, written in script and in all possible attractive forms of communication serve the public, through the mails, with all kinds of medicinal literature and through this large amounts of medicines, sometimes of a poisonous character, reach the homes of numerous families.

A victim of one of these mail order physicians was found one afternoon unconscious under the influence of a very powerful narcotic (?) which led to a request for an investigation of the medicine he had taken. The results of this investigation was handed to the patient and his friends."

President Harry Brisley, Prescott, Arizona, writes:

"I believe the best remedy for existing ills would be found in a publication of national circulation, which would fearlessly champion our cause and vigorously oppose schemes tending to exploit the drug trade to its detriment. Present editors are carefully steering between points of least resistance, indulging in platitudes or resurrecting threadbare and dead issues, afraid to voice what they know to be vital facts."

Professor E. G. Eberle, Dallas, Texas, writes:

"In sending out letters to druggists I will enclose slips asking for information requested in your circular."*

Professor Charles W. Johnson, Chemist for State Dairy and Food Commission, Seattle, Washington, writes:

"So far as we can see now, the Commission has the right to investigate such drug materials. When the investigation is completed, I can get data which will be of interest."

Professor E. H. La Pierre, Boston, Massachusetts, writes:

"What we know is one thing, and what we hear and cannot verify is another. I really feel that we are not suffering from this evil in this state. I am quite sure that any effort to put upon the statute books a law governing the condition at the present time would arouse a storm of resentment."

From a Doctor whose name is withheld by request:

"The remedy for the dispensing evils will come from the doctors themselves. Even now young men, graduated as physicians, look with scorn on the dispensing habit and inwardly disdain the practitioners who cling to it. A few short years, and the older physicians will be dead and retired. The newer ones will prescribe by degrees. The people will discover that the new men with new ideas are the best doctors, and the latter *will not have to dispense*."

Caswell A. Mayo, New York, writes:

"The doctors will undoubtedly object very strenuously to the suggestion emanating from the retail druggists that their action should be subjected to any kind of supervision, but it seems to me that it could be put in such a way as to reduce to a considerable extent any opposition which may be aroused. The only way in which such a revision could be provided for would be the enactment of such a law as was proposed by the Kansas Association."

In this connection it may be well to quote the *Resolutions* referred to. They propose:

"Section 1. That any physician who shall sell, compound, dispense, administer, or give away, any medicine or remedy for or to any patient or other person, shall write a prescription or order for such medicine or remedy in such form as to be legally intelligible.

Section 2. The original or a copy of any or all such prescriptions written, in every instance of such dispensing, shall at the time thereof be supplied to such person, or patient, or any legal representative."

It will be seen that such a control would meet in part Mr. Ford's idea, and be a public protection safe-guarding the physician as well. The question is pertinent: Should not some legal record (given to patient or other legally qualified person) be made of the medical treatment? During the past year, several cases of suspicious malpractice have come to the Drug Laboratory. The only clue, to relieve the patient or the doctor, was the unused portion of the medicine dispensed, which was sent for analysis. It should not be construed as an "impudent interference" to ask that the physician himself, as well as the public, be protected.

* These slips, containing reports of conditions in Texas, have recently been placed in the hands of the committee, but no compilation of them has yet been made.

Letters from a great number of prominent pharmacists, offering their cooperation and encouragement, should be here acknowledged; these all show, not a narrow, selfish or sordid view of the subject, but evidently face the problem on the high plane of the public good.

It is the belief of your Committee that when the problem of irresponsible dispensing on the part of either pharmacist or physician is clearly understood, and when properly presented to our legislators, it will engage their attention and with them, and with the support of the people, we shall find a satisfactory solution of the problem.

Dr. Albert Schneider informs the Committee he hopes to submit a separate report as member of this Committee. He thinks the resolutions of the Kansas Association unnecessarily harsh "though the main idea is all right." He further believes that those resolutions should also deal with the prescribing and practicing pharmacist. Dr. Schneider has made suggestions from time to time regarding this Committee work, through the Pacific Pharmacist.

ALBERT SCHNEIDER,
L. E. SAYRE,
E. V. HOWELL.
Committee.

REPORT OF THE COMMITTEE ON PATENTS AND TRADEMARKS.

F. E. STEWART, CHAIRMAN.

The decision of the Supreme Court of the United States, handed down March, 1912, although opposed by the dissent of three judges, the Chief Justice giving the dissenting opinion, settles the law in regard to the rights of patentees under the patent laws as they now exist.

The Court holds that under the present laws it is a good contract and enforceable when the owner of a patented mimeograph machine sells it with the condition annexed that the purchaser shall use in operating the machine only stencils, paper, ink and other supplies as sold by the patentee.

It is evident that this gives the patentee more than he is entitled to by enabling him to monopolize the sale in connection with his invention of articles unpatented and the sale of which is otherwise free.

It is further evident that such a power in connection with patents which approach the nature of necessities, is capable of abuse and creates unfair monopoly.

The eminent Chief Justice denounced this decision with indignant eloquence. The Attorney General asked the Supreme Court to rehear the case, but was refused. Impressed with the fact that the decision has opened the way to one of the worst forms of oppression which a monopoly can practice, the President of the

United States on May 10, took a step toward revision of the patent laws, which have remained practically unchanged since 1870. He sent a special message to Congress, asking for legislation to authorize him to appoint a commission to investigate the patent laws and report what changes were necessary to make them fit modern conditions.

In this message the President called attention to the fact that large corporations bought patents for improvements and suppressed their manufacture. "The public," said the message, "never received the benefit of such machine inventions during the life of the patent."

The President referred to the patent laws of other nations and wrote:

It is worthy of careful consideration, whether or not legislation on some such lines should be enacted to prevent our patent laws from being made the basis of unjust monopoly extending beyond the legitimate protection to inventors required to promote science and the useful arts, or the means of stifling improvement and the progress of the arts.

The President urged that procedure under the patent laws be simplified and that the burden of proving the invalidity of a patent be placed upon him who would infringe upon it.

In conclusion, the President wrote:

Great care should be taken in any revision not unduly to interfere with vested interests which have been properly created under the existing laws, or to impair the efficiency of a system from which so much benefit has been derived by the country.

All persons who have investigated the subject will admit that our patent laws as applied to materia medica have been made the basis of unjust monopoly; that these laws have not promoted progress in medical science or in the arts of pharmacy and drug-therapeutics; that the protection afforded by them has enabled alleged therapeutic inventors to build up a great commercial business in monopolized products which has been carried on in unfair competition with the medical and pharmaceutical professions; that tens of thousands of alleged new remedies have been introduced under the protection afforded by the patent and trade-mark laws during the past thirty years, and not one-tenth of one per cent. of them have proved of any especial medicinal value; that the advertising system used for creating a demand for them has been justly characterized as a "system of fraud, error, humbug and lies, and reform is greatly needed."

The President has called attention to laws of other nations in relation to patents. Take for example, Germany.

The German patent law excepts from patent protection: "(1) inventions the applications of which are contrary to the laws or public morals; (2) inventions relating to articles of food, whether for nourishment or for enjoyment, and medicines, as also substances prepared by chemical processes in so far as the inventions do not relate to a definite process for the preparation thereof."

Patents are granted, however, for processes and apparatus for manufacture, and Section 35 provides a method for protecting the inventors of processes for preparing new products in the following manner: "If the invention relates to a process for the production of a new substance, all substances of like nature are considered as having been made by the patented process until proof to the contrary is given."

Medicines are excluded from patent protection not only in Germany, but also in France, Austria-Hungary, Italy, Japan, Denmark, Norway, Sweden, Portugal, Russia and a number of other countries.

Other classes of inventions excluded from protection in many countries, as well as Germany, are foods, chemical products and inventions relating to war material.

In all these countries exclusion from protection of inventions relating to medicines or foods does not generally extend to those relating to processes or apparatus for their manufacture. In all foreign countries which exclude chemical products from protection, except Switzerland, inventions relating to chemical processes may be patented, and in nearly all such countries it is expressly provided by law that a patent for a chemical process by which a new chemical product is made shall in effect cover such product, unless it be shown that the product was made in fact by some other process. In other words, when a new product is discovered, and a process of manufacture is patented, no person is permitted to compete with the original patentee unless he is able to show that the process he is to employ for that purpose is not an infringement upon the patented process.

Under the United States patent law, no class of useful inventions is excluded from protection. Any person who has discovered a new product to be used either as food or as a medicine, may patent the same, and thereby acquire a monopoly of its production for a period of seventeen years. Foreign manufacturers take advantage of the United States patent law and patent their products in the United States. The monopoly thus acquired enables them to obtain a high price for their patented products during the life of the monopoly. The profit thus secured is not used for the benefit of the American industries, but is applied to building up the industries of foreign countries at the expense of the American people.

A commission was appointed under act of Congress, approved June 4, 1898, to "revise the statutes relating to patents, trade and other marks, and trade and commercial names." It was urged before this commission, both at its hearings and in written communications read before it, that the United States patent law should be amended to exclude from patent protection both medicines and chemical products generally, at least in so far as such inventions are the inventions of subjects or citizens of the foreign countries which exclude this class of inventions from patent protection, and it was contended then, and has been the contention ever since, that subjects or citizens of foreign countries should not be allowed to receive in this country patents for inventions which are not patentable in their own country.

In spite of all the protests the American Pharmaceutical Association and the National Retail Druggists' Association have placed before Congress, the United States patent laws have not been amended to protect the American people. Consequently, in considering the question before us, it must be clearly understood that what we have to say in condemnation of the patent system applies exclusively to the United States. While it may be perfectly ethical for German physicians to cooperate with German chemical houses in the method which they have chosen for introducing new materia medica products in Germany, it is certainly not ethical for the American medical profession of the United States to cooperate with

manufacturers in the methods taken for the introduction of the product in this country.

The Hippocratic oath imposes the obligation upon each member of the medical profession to report the results of his experience and observations in the practice of the healing art to the common fund of knowledge, that his fellow-members may have the benefit of his inventions and discoveries. The proper introduction of new materia medica products requires the use of the educational machinery of the profession, i. e., the professional press, societies, colleges, text-books, pharmacopoeias, and dispensaries. It is, therefore, essential that the profession shall have the control of this educational machinery to prevent the danger of exploitation and the teaching of error, and shall not allow that control to pass into the hands of commercial houses engaged in the materia medica supply business. Because this fact has been lost sight of, and the control of the practice of the pharmacological arts has largely passed out of the hands of the medical profession and become vested in commercial houses presided over by business men who are not familiar with professional obligations, and who are engaged in introducing new materia medica products to commerce by advertising, that portion of the medical press accepting advertisements is placed in the position where it is attempting to simultaneously carry on a professional propaganda in the reading pages and a commercial propaganda in the advertising pages concerning the same materia medica products.

The President urged that procedures for the patent laws be simplified, and that the burden of proving the invalidity of a patent be placed upon him who would infringe upon it. This is quite in line with Section 35 of the German patent law, which provides that "if the invention relates to a process for the production of a new substance, all substances of like nature are considered as having been made by the patented process until proof to the contrary is given."

It has been suggested by your chairman in various reports that the German process patent law shall be properly modified and made applicable in this country. To this it has been strenuously objected that it is unconstitutional in this country to place the burden of proof upon would-be infringers, for under our system of jurisprudence a man is considered innocent until he is proved guilty. President Taft is recognized as an able constitutional lawyer, yet recommends that the burden of proving the invalidity of a patent be placed upon him who would infringe upon it. It is evident, therefore, that the objectors are either ignorant or something worse when making this objection.

The President calls attention to the necessity of so revising the patent laws as not unduly to interfere with vested interests which have been properly created under the existing laws. It is, therefore, essential to ascertain what rights the inventors have under the common law.

"An inventor has no right to his invention at common law. He has no right of property in it originally. The right which he derives is a creature of the statute and of grant, and is subject to certain conditions incorporated in the statutes and in the grants. If today you should invent an art, a process, or a machine, you have no right at common law, nor any absolute natural right, to hold that for seven, ten, fourteen, or any given number of years, against one who

should invent it tomorrow, without any knowledge of your invention, and thus cut me and everybody else off from the right to do tomorrow what you have done today. There is no absolute or natural right at common law, that I, being the original and first inventor today, have to prevent you and everybody else from inventing and using tomorrow or next day the same thing.¹

"The policy of the patent law is, primarily, a selfish one on the part of the public, and only secondarily intended for the benefit of inventors, and then as a means to an end only. The Constitution of the United States gives Congress the power 'to promote the progress of science and the useful arts, by securing for limited times, to authors and inventors, the exclusive right to their respective writings and discoveries'; thus showing, in this fundamental legislation, that the object sought is a benefit accruing to the public."²

"The theory of the law is, that the promotion of science and the useful arts is of great benefit to society at large, and that such promotion can be attained by securing to inventors and authors, for limited times, the exclusive right to their inventions and writings. That such theory is correct, it is needless to say. It is almost self-evident, or at any rate readily susceptible of proof, that the magnificent material prosperity of the United States of America is directly traceable to wise patent laws and their kindly construction by the courts."³

"The patent laws promote the progress of the useful arts, in at least two ways: First, by stimulating inventors to constant and persistent effort, in the hope of producing some financially valuable invention; and, second, by protecting the investment of capital in the working and development of a new invention from interference and competition till the investment becomes remunerative."

"A patent is a contract between the inventor and the government representing the public at large.⁴ The consideration moving from the inventor is the production of a new and useful thing, and the giving to the public of a full knowledge thereof by means of a proper application for a patent, whereby the public is enabled to practice the invention when the patent expires. The consideration moving from the government is the grant of an exclusive right for a limited time, and this grant the government protects and enforces through its courts."⁵

"The statute enacts, 'That, before any inventor or discoverer shall receive a patent for his invention or discovery, he shall make application therefor, in writing, to the Commissioner, and shall file in the Patent Office a written description of the same, and of the manner and process of making, constructing, compounding and using it, in such full, clear, concise, and exact terms, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same.'"

When the object of the patent law and the nature of the patent privilege are considered, it would seem as though the patent system, if properly applied to medicine, would do more than anything else to promote progress in medical science and in the useful arts of preparing medicine and administering the same for the treatment of the sick, yet since the time of Hippocrates, who lived about 400 years before Christ, until the present, the medical profession has opposed the monopoly of inventions relating to the treatment of the sick.

Why should the profession take this attitude?

¹Am. H. & L. S., & D. Mach. Co. vs. Am. Tool & Mach. 4 Fisher's Pat. Cases, 294.

²Simond's Manual of Patent Law.

³Day vs. Union Rubber Co., 3 Blatch, 500; Kendall vs. Winsor, 21 Howard, 327.

⁴Ransom vs. N. Y. 1 Fisher's Pat. Cases, 252.

⁵Simond's Manual of Patent Law.

There are many reasons, not the least of which is that the monopoly (created by the patenting of materia medica products or by registering their names as trade-marks and claiming them as private property) enables manufacturers to commercially control medicinal products and introduce them to the medical profession or to the lay public by misleading advertising.

The new product, therefore, becomes a secret nostrum. The secrecy relates to the therapeutic information concerning the product. No matter if its identity is disclosed (as it is in the case of patented synthetics), if the therapeutic value of the product is exaggerated, and its untoward effects, therapeutic limitation, or merits as a remedy in comparison with other remedies used for the same purpose, are suppressed or minimized, the new product is a secret nostrum.

The statute enacts that the inventor shall publish his invention "in such full, concise, and exact terms, as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound and use the same." Chemical inventors are usually not educated in medicine, consequently not in position to teach the medical profession how to use their inventions as therapeutic agents.

Moreover, as a rule, it is not the inventor who attempts to do the teaching, but the manufacturing house engaged in the commercial introduction of the product by advertising. The great objection to the system of introducing controlled materia medica products by advertising is that commercial houses assume to teach the profession what they themselves do not know.

On the other hand, physicians who have tested them cannot safely teach the profession how to use controlled materia medica products, for if they speak disparagingly of them they are liable to lawsuit, and if they praise them, they will probably be accused of selling their integrity to the manufacturing houses. Many such cases are on record.

While favoring the patenting of processes and machinery used for manufacture, your committee is not in favor of product patents, believing that the patent systems of foreign countries which exclude medical inventions from patent protection is to be preferred to our product patent system.

Next, in regard to trade-marks. This is a very different question. The function of a patent is to create a monopoly of the thing patented, during a period of seventeen years, the function of a trade-mark, on the contrary, is not to create a monopoly, but to stimulate competition.

What is a trade-mark? A trade-mark is a commercial signature affixed to his brand of goods by the manufacturer to show that he made them. A trade-mark indicates the ownership or origin of the *brand*, not the ownership of the *product*, as some would have us believe.

Condensed milk is the name of a product, and "Eagle" Brand, "Anglo-Swiss," and "White Cross" Brand are names of brands. Trichlormethane is a product. The name is long and unwieldy, so a short, euphonious name was coined for it, viz., "chloroform." But the name "chloroform" is just as much the name of a product as trichlormethane; and when the product is ordered by one name, the dispenser is justified in dispensing it under either name. Hexamethylenamine is

the official name of a product. On turning to the National Dispensatory and other text-books it will be noted that various synonyms are given for this. Each of these synonyms is claimed by the manufacturer as a trade-name or trade-mark. The question arises, are druggists justified in purchasing hexamethylenamine under that name and dispensing it in physicians' prescriptions when the product has been specified under one of the so-called trade-names? Ask the several manufacturers who claim these names as trade-marks, and they will answer that druggists who purchase the product under the name of hexamethylenamine and dispense it when it is prescribed under any of the trade-names are guilty of fraudulent substitution. If the so-called trade-names are in fact brand names, the manufacturers are right and the text-books are teaching fraudulent substitution. Conversely, if the text-books are right, the manufacturers are wrong.

The name of a product cannot be a trade-mark. "Sugar" cannot be a trade-mark on sugar nor "salt" on salt. Each new product must have a name of its own under which it may be manufactured and dealt in, and such name becomes by use a noun of the common language, and all who have the right to make the product have an equal right to deal in it under the name by which it is generally known. This has been clearly shown in the decision of the United States Supreme Court in the Singer Sewing Machine case, which reads as follows:

The result, then, of the American, the English, and the French doctrine universally upheld is this, that where during the life of a monopoly created by a patent a name, whether it be arbitrary or be that of the inventor, has become, by his consent, either express or tacit, the identifying and generic name of the thing patented this name passes to the public with the cessation of the monopoly which the patent created. Where another avails himself of this public dedication to make the machine and use the generic designation, he can do so in all forms, with the fullest liberty, by affixing such name to the machine, by referring to it in advertisements, and by other means, subject, however, to the condition that the name must be so used as not to deprive others of their rights or to deceive the public, and therefore that the name must be accompanied with such indications that the thing manufactured is the work of the one making it as will unmistakably inform the public of the fact.

How about the names of products which have not been patented? Can they be owned by the manufacturer? The manufacturers of proprietary medicines say "yes." Their claim is based on two other claims, the first being that unpublished formulas or methods of manufacture are trade secrets, and, therefore, the property of the manufacturers; and the second, that the names, being coined, are, therefore, the property of the inventors thereof. These are the claims of the so-called "proprietary" medicine manufacturers. They are erroneous. It has been decided by the courts again and again that any person who discovers a trade secret by legitimate means has a right to use it. When a secret is divulged, it is a trade secret no longer. As pointed out by the court in the celebrated Angostura Bitters case, while the medicine is monopolized the name of the product and the name of the brand are one and the same. But when the secret is divulged, the question arises whether the name is that of the product or the name of the brand, and the court decided that the name Angostura Bitters is the name of the product on the ground that, the secret having been divulged, any person had an equal right to manufacture and deal in it. The same point came up incidentally

in the decision of the United States Supreme Court in the Miles Medical Company case, in which attention was called to the fact that any person has the right to make and sell unpatented medicines if they know how to make them and obtain their knowledge legitimately.

It is commonly believed that when a person coins or invents a name he possesses a natural right to its exclusive use because it is a "child of his brain." This, however, is an error. Authors and inventors do not possess a natural right to prevent others copying their respective writings and discoveries. Copy-right and patent-right are grants, not natural rights.

Many believe that invented names may be patented or copyrighted. This is also an error. As stated in Circular No. 19, issued by the Librarian of Congress, "the copyright laws contain no provision under which protection can be obtained upon a mere name or title. Entry cannot, therefore, be made in the copyright office for coined names; names of articles of manufacture; names of games or puzzles; names of products, or names of medicines."

Others believe that coined names may be "trade-marked," just as inventions may be patented. The trade-mark law creates no such right. You cannot trade-mark a name. You can register it as a trade-mark, but no right to its exclusive use is granted thereby. If you use it as a trade-mark you have a right to prevent others from using it as a brand mark on the same class of goods. But if you use the name of the product itself you have no one to blame except yourself if the name becomes a noun of the common language, and therefore common property.

The manufacturers of antipyrin, acetphenetidin, and many other German synthetics, patented their products under the chemical names, and registered the coined names as trade-marks. Now, as the right to use a trade-mark is a natural right, and is protected by the common law—a manufacturer having just as much right to use his commercial signature for the purpose of indicating the source of the brand of his product as he has to sign his name to a check—that right does not expire like a patent. Consequently, the manufacturers hoped by this scheme to defeat the object of the patent law, which is to promote progress in science and useful arts by granting inventors the exclusive right to their inventions for limited times, in exchange for the publication of full knowledge thereof by the proper application for patent. However, "Uncle Sam" had something to say about this. He said it in the decision of the Supreme Court of the United States in 1895, in the Singer Sewing Machine case just cited.

As stated by a well-known judge, "the names of medicines are either descriptive or deceptive. If they are descriptive they cannot be trade-marks, and if deceptive, the manufacturers of the medicines cannot go into court with clean hands to defend their trade-mark claims." However, each case must be settled on its merits, for the question must always arise whether the name under discussion is the name of the product itself, or the name of the brand of the product.

The well-known house of Merck and Company has solved the problem in relation to the names of new materia medica products by listing each one under the common or generally adopted name and then adding all of the so-called trade-

names or trade-mark names as synonymous therefor. For instance, we find saccharine listed as follows:

Saccharin Merck,—Refined:

(Benzolysulphonic Imide; Garantose; Glusidum; Gluside; Glycophenol; Glycosine; Saccharinol; Saccharinose; Saccharol; Saxin; Sykose; Zuckerin; Glusimide; Agucarina; Toluolsüss; Anhydroorthosulphaminebenzoic Acid; Benzo-sulphinide (U. S. P.); Neo-saccharin.)

In doing so, Merck merely followed the lead of most of the text-books on *materia medica*, including dispensaries.

It is evident, therefore, that the solution of the trade-mark problem is entirely under the control of the medical and pharmaceutical professions as represented by the professional press, including the publishers of medical and pharmaceutical journals and text-books. No matter what brand of a product a pharmacist may have in stock, he is justified in dispensing it, irrespective of the name employed by the physician in prescribing it, if the physician is consulted and his wishes ascertained. This is not fraudulent substitution.

After considering this important subject from the various points of view above presented, your Committee recommends the following:

1. That patents relating to new *materia medica* products should be limited to processes and apparatus for manufacturing.
2. That the burden of proving the invalidity of a patent be placed upon him who would infringe upon it, as suggested by President Taft.
3. That legislation against lying in advertisements relating to medicine should be secured.
4. That the trade-mark laws should be amended by adding a paragraph, making it apparent that where a man makes a new article which has no proper name, or common appellative, and gives it a name by which it alone is known, he cannot hold an exclusive right to that name under the law of trade-marks.

The trade-mark law itself would thus make it plain that anybody has the right to sell a so-called proprietary medicine under its own name, and trade-mark rights will be restricted to names which contain the name of the manufacturer, or consist of some fanciful name which leaves the common appellative open to the public.

It is gratifying to note that at the recent meeting of the American Medical Association a committee was appointed to request that the Board of Trustees of that body sue for the annulment of the trade-mark registration of an article intended to be sold as a medicine and instructed the chairman of the Council on Health and Public Instruction to endeavor to secure a modification of the present patent laws eliminating product patents on substances used as medicines.

S. L. HILTON,

SOLOMON BOEHM,

L. G. BLAKESLEE,

L. W. GRIFFIN,

F. E. STEWART, Chairman.

Report on the Progress of Pharmacy

For the Year 1912

C. LEWIS DIEHL, Reporter.

(Third Installment.)

Benzoic Acid: Expeditious and Reliable Method of Determination in Food Products.

—In his report to the German War Department, Sanitary Division, Staff-Apothecary Biernath recommends the method of A. Jonescu for the detection of benzoic acid in food products as being quite sensitive and expeditious, requiring with the aid of distillation not more than fifteen minutes. The reaction consists in the addition of one drop of 1% ferric chloride solution and 3 drops of a 1% H_2O_2 solution to the distillate, and is available in the presence of 0.001 gm. of benzoic acid in the food under examination. The presence of mineral acids, volatile and fatty and other acids must be excluded. Salicylic acid is completely destroyed and excluded if after the distillation of the material under examination with 0.5 gm. of sulphuric acid and 20 cc. of water, the distillate is treated with alkaline potassium permanganate, then redistilled, and the distillate tested by Jonescu's reaction.—Pharm Ztg., LVII (1912), No. 18, 176.

Nitric Acid: Difficulty to Obtain a Commercial Product Free from Chlorine.—The technical production of chlorine-free nitric acid depends on the rectification of the commercial acid and rejecting the first portions of distillate, changing the receiver until the distillate, after dilution with water, fails to produce turbidity with silver nitrate solution. Dr. P. Bohrisch observes that when this simple process is conducted with care, there should be no difficulty for manufacturers to supply chlorine-free nitric acid; yet, he has found it very difficult to obtain nitric acid on the market, even from some of the most renowned manufacturers, that responds to the official (G. P.) requirement for the absence of chlorine. The absolute freedom of nitric

acid from the even traces of chlorine is particularly required when carrying out Sahli's reaction for the detection of chlorine in urine, which is modernly frequently depended on in urine examinations—the reagent consisting of 1/10 N. solution of silver nitrate in the official nitric acid and a certain proportion of solution of ferric sulphate.—Pharm. Ztg., LVII (1912), No. 19, 189.

Scammony Resin: Applicability of Iodine for Microscopical Examination.—L. Lutz points out the availability of iodine for the microscopic examination of scammony resin. If a drop of iodine water is added to the powdered resin a syrupy mixture is formed in which the contours of the resin particles become rounded and are only faintly discernible. In inferior sorts this formation of syrup does not occur, and starch if present becomes blued.—Pharm. Ztg., LVIII (1912), No. 23, 232; from Bull. des Scienc. Pharmacology, 1912, No. 2.

Balsam of Peru: Improved Method of Examination.—T. Delphin recommends the following improved method for the examination of balsam of Peru: About 2 gm. of the balsam are dissolved in a flask in an equal volume of ether and 20 cc. more of ether are then added. The solution is filtered into a separating funnel and the flask and filter are washed with ether until a few drops of the filtrate leave no residue on evaporation. To the united filtrate and washings 40 cc. of $\frac{1}{2}$ N.KOH are added and the mixture is decomposed by careful shaking. The lower portion of the liquid in the separator is then run off and the residual ether-solution washed several times by shaking out with portions of 2 cc. of water. On then evaporating the ether-solution, the total cinnamoin is obtained in a pure condition and in reliably qualitative proportions. The neutralized re-

determination is then heated on a water bath signal liquid remaining after the cinnamcin to drive off any alcohol, transferred to a separator with the rinsings of a little water, and shaken out with ether twice. It is then diluted with water to 25 cc. and a few drops of calcium chloride solution are added. If the balsam is pure, only faint opalescence is produced, but if it contains fixed oil this is revealed by the copious precipitate formed.—Pharm. Ztg., LVII (1912), No. 20, 198; from Svensk. Farm. Tidskrift., No. 3, 1912.

Alkaloids: Microchemical Identification.—Comprehensive investigation made by Dr. A. Grutterink convince him that many of the natural as well as synthetic alkaloids may be identified with accuracy, rapidity and reliability by microchemical methods, depending on the formation of characteristic crystallizations with certain organic acids. The author mentions an extensive series of acids which he has found exceedingly useful, and believes that further study will determine other organic acids that will prove capable of forming characteristic crystalline compounds. Furthermore, the author has shown that potassium permanganate also supplies a valuable reagent for microchemical determinations, serving particularly well for the identification of hydrastine, tropacocaine, and cotarnine.—Pharm. Ztg., LVII (1912), No. 21, 210; from Ztschr. f. Analyt. Chem., 1912, 175-238.

Quinine: Detection in the Presence of Pyramidon.—C. Mannich and L. Schwedes, of The Pharmaceutical Institute, University of Goettingen, found that the thalleioquin reaction will develop a red instead of a green color, even in the presence of a very small quantity of pyramidon. In order to obtain a normal reaction the pyramidon must be removed, which can easily be done owing to its great solubility in water. The therapeutic reaction is also retarded in the presence of pyramidon, in which case more iodine solution must be used.—Apoth. Ztg., 1912, No. 37, 343.

O. R.

Milk: Test of Freshness.—The reagent is prepared by diluting 0.1 cc. of a saturated alcoholic solution of methylene blue with 70 cc. of distilled water. Of this solution 1 cc. is mixed with 50 cc. of milk, 30 cc. of alcohol are added, and the mixture is kept at about 37° C. and exposed to light. If the milk is

not fresh the color will be discharged within 30 minutes.—Sc. Am., 1912, No. 24, 531.

O. R.

Oil of Mosla: Hydrocarbon Constituent.—Y. Murayama and Y. Nara several years ago determined the presence of carvacrol and p-cymol in the oil of *Mosla Japonica* Maxim., and have now isolated d-pinene as another constituent.—J. Ph. Soc., 1912, No. 363, 457.

Urine: Quantitative Determination of Indican.—Dr. O. Sammet of the Technical High School at Zürich, explains the formation of indican or potassium indoxysulphate, which is contained in healthy urine from 0.006 to 0.02 percent, and in pathogenic urine up to 0.3 percent. He reviews the different methods of determining indican quantitatively, according to Obermeyer-Wang, Bouma, Strauss and especially according to Folin. The latter, which is extensively used in the United States, is a colorimetric method in which the color of the indigo-chloroform extract is compared with the one of Fehling's Volumetric Solution. Sammet enumerates the advantages and disadvantages of Folin's method and reaches the conclusion that for clinical purposes it is sufficiently accurate. For particulars the original article should be consulted.—Ph. Zhalle, 1912, No. 22, 585-589.

O. R.

Manna-Fern (Lecanora esculenta).—The "biblical" Manna.—In an article contributed by Ch. Rolland, he says that the "Manna-fern"—the "Manna of biblical history"—is used in Persia not only as a nutrient but also as an effective galactagogue, under the name of "Chirzadt," in daily doses of 150-200 gm., by women who are weakened by frequent childbirth or by malnutrition. This fern rapidly develops after heavy rains from dry structural condition to wart-shaped, light, white, internally mealy formations, which are consumed by man and animals as a welcome food. This development is so rapid, that the assumption of the wandering Israelite that the "Manna has fallen from Heaven" is easily explained. The nutrient value of this fern (*Lecanora esculenta*) is apparently due to a content of 20 to 25 per cent of lichenin. It is stated in Kerner von Marilaun's "Pflanzenleben" that the fern is distributed over an enormous territory in Asia, extending its area to southeastern Europe and northern Africa. It forms at first thick,

furrowed, warty incrustations upon rocks, preferably on small lime-stones, has superficially the color of a mixture of grey and ochre-yellow, the fracture showing a pure white resembling the interior of a crushed grain of wheat. By age the crusts become fissured, become detached from the rocks, and are carried off by wind and rain in the form of conglobate or warty aggregations of about the size of a filbert. When these find lodgement eventually, they are rejuvenated by rains and renew their growth. During years of famine the Manna-fern is a welcome substitute for grain and like this is consumed, after grinding, in form of bread.—Pharm. Ztg., LVII (1912), No. 23, 232; from Bull. Commerce, 1912, No. 1.

Iron: Protection from Rust.—Prof. H. J. Lohman's patented method to permanently protect ferric articles from corrosion makes it possible to apply to the surface of steel or iron a coating of any non-corrodible metal of the lead group or a combination of these metals. The thoroughly cleansed articles are immersed from one-half to two minutes in the so-called Lohmann bath containing the chemicals. During this period the pores of the metal are freed from oxygen and the amalgamating agent is deposited over the surface so that when it is dipped into the molten metal the pores are entirely filled and an integral union or chemical weld is made between the treated metal and the non-corrodible coating.—Sc. Am., 1912, No. 24, 554-555. O. R.

Oil of Lavender: Phthalic Acid Ester an Adulterant.—In 1908 T. Delphin called attention to cocos-ester as an adulterant for oil of lavender. He has now determined a new adulterant in lavender oil devised from southern France, which proved to be an ester of phthalic acid. This acid is now prepared and used industrially in the manufacture of colors and on account of its cheapness and the general character of its esters lends itself economically as an adulterant of volatile oils. Although the acid was positively identified as phthalic acid among the products of saponification of the lavender oil by its molecular weight, chemical reactions and constants, the small quantity of material prevented the

identification of its ester-component. The author, however, conjectures that the adulterant is probably the ethyl-ester of phthalic acid, the characters and constants of which, and particularly its faintly odorous properties, appear to adapt it to its fraudulent use. Pharm. Ztg., LVII (1912), No. 27, 272; from Seensk. Farm. Tidskrift., 1912, No. 5.

Rhubarb: Geographical Distribution, Cultivation, etc., with Particular Consideration of the Plant Yielding the Official Drug.—Dr. C. Hossius has published the results of a comprehensive study of the geographical distribution of rhubarb plants, touching first upon the historical facts regarding the introduction of the drug, and confirming, on the basis of his further investigations, his previously expressed opinion (see "Report" 1911), that only *Rheum palmatum*, L., can be regarded as being the parent plant of the official drug. Furthermore, he discusses the methods of its cultivation and preparation as described in the literature, and advances the opinion that the cultivation of the official drug in the calcareous soil of some portions of Germany and Austria promises to become very successful. Quoting from the studies of Maximowis and others, he says:

"The rules for the cultivation of rhubarb (*Rheum palmatum*, L.) are the following: A light, loose, black humus. Setting out the plants in such spaces that they may develop completely (about eight feet apart, so that the leaves may properly spread out). Providing shade by means of trees; sprinkling with regularity, (because of the moist climate prevailing in Kanzu, where the drug is most successfully cultivated), and selecting situations exposed to the south. Furthermore, inasmuch as the content of medicinally active substances in rhubarb goes hand in hand with its content of crystalline calcium oxalate, it is considered necessary for the proper development of the drug that the water-supply should consist of hard water containing an abundance of lime. Indeed, it seems probable that failure to provide such a supply has hitherto been responsible for the inferiority of rhubarb cultivated in Europe.—Pharm. Ztg., LVII (1912), No. 23, 232; from Oesterr. Botan. Ztschr., 1911, No. 12, and 1912, No. 1.

Editorial Notes and Announcements

Committee on Publication:

JOS. W. ENGLAND, *Chairman*, Philadelphia, Pa.
 GEO. M. BERINGER.....Camden, N. J.
 F. W. MEISSNER.....La Porte, Indiana
 JOS. L. LEMBERGER.....Lebanon Pa.
 FREDERICK J. WULLING...Minneapolis, Minn.
Ex-Officio: THE EDITOR, ASSOCIATE EDITORS
 AND TREASURER.

JAMES H. BEAL, Editor.....Scio, O.
 C. LEWIS DIEHL.....Louisville, Ky.
 Associate Editor and Reporter on the
 Progress of Pharmacy.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

In giving change of address, always give both the old and the new address.

RULES OF CENSORSHIP.

1. All contracts for advertising are accepted subject to revocation at the discretion of the Publication Committee.

2. No advertisement will be accepted for any article or service, the sale or furnishing of which is illegal in the state of publication or in any state in which the JOURNAL circulates.

3. Advertisements will not be accepted for articles belonging to the class of preparations commonly known as patent medicines, nor for any medicinal preparation advertised directly to the laity, or which is advertised in such a manner as to encourage self medication.

4. Copy which is vulgarly or extravagantly worded, or which makes extravagant claims of therapeutic virtues will not be accepted.

5. No advertisement will be accepted which by intent or inference would result in deceiving, defrauding or misleading the reader.

REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.

200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.

50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.

100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.

200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.

50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.

100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.

200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co.



SOME RESULTS OF THE SIX- TIETH ANNUAL CONVEN- TION.

While to preserve historical continuity the detailed account of the sixtieth annual convention will be presented in another number of the JOURNAL, some of its more important features may be mentioned here.

The attendance though not up to some former records was fairly satisfactory, considering the distance of the meeting place from the sections where the Association is strongest in membership. The cluster of states immediately surrounding Colorado were well represented, while the Pacific Coast States contributed liberally to the number of delegates present.

The Eastern States, however, were rather slenderly represented, except by members who regard attendance at the annual meeting as a regular part of their yearly program. From Massachusetts, chiefly from around Boston, came a party of 25 or more, which took in the Denver meeting as part of an extensive tour through Yellowstone Park and the Rockies.

One of the most important items of con-

structive work was the creation of a House of Delegates, to assist in expediting the convention's yearly business by the preliminary hearing and discussion of matters which can not be properly heard or efficiently dealt with in the limit of time allotted to the General Sessions.

The House of Delegates is composed of properly accredited delegates from pharmaceutical and allied associations and from schools and colleges of pharmacy, whose credentials have been approved by the Council, together with the general officers of the associations and five members of the Council.

The functions of the House of Delegates are:

To receive and discuss reports and recommendations from its delegates.

To consider and report upon such matters as are referred to it by the Council or by the Association.

To act as a General Committee on Resolutions and to propose and report to the Council a series of resolutions upon the subjects considered by the House.

From the above enumeration of powers it will be seen that the House of Delegates is in the nature of a court of first resort, where matters of association interest can be given preliminary hearing and put into shape for prompt disposal by the Council and General Sessions.

Having been enacted by resolution of the Council, ratified by the General Session, the House of Delegates has only such powers as are conferred upon it by the resolution. It can recommend action to the Council, but it cannot enforce its recommendations, and thus there is no chance of its becoming a Frankenstein monster capable of destroying its creator.

By its undertaking the hearing of the greetings of delegates and others, it will relieve the First General Session of a duty which has long interfered with a prompt disposal of more important business, and by considering and putting into proper shape original resolutions which are too meritorious to reject, but are not in proper form for adoption, it will relieve the general body of a vast amount of detail work that can be better done by a subordinate body. The General Session and Council still retain full power to hear and dispose of any resolution or motion if they prefer to do so.

In short the House of Delegates at present

possesses advisory powers only, though it is the hope of its friends that these will be exercised so discreetly and to such good purpose that the Association will in time materially enlarge the scope of its activities.

Although its organization was not authorized until late in the meeting, the House, nevertheless, was able to demonstrate its usefulness by whipping into shape a body of resolutions which otherwise could not have been given proper consideration. Next year, with a definitely outlined program, the new body will be able to fully establish its utility, or else demonstrate its inability to deal with the work which is referred to it. The fate of the House of Delegates is in its own hands.

Another piece of constructive work was the authorization of a Women's Section or Auxiliary, the temporary officers and committees of which are to be provided by the Council. At its first annual meeting the newly-created body is to adopt its own body of rules and regulations and elect its own officers, and in the future will have control of its own destinies, except as to the place which it is to occupy on the annual program.

By the creation of this Section it is hoped to provide the ladies of the convention with the means of employing their time during Section meetings with other things than trolley rides and euchre parties. The local committee will not therefore feel compelled, as heretofore, to provide such diversions during the working hours of the meeting, so that all excursions, etc., can be deferred until the more serious business of the convention has been disposed of, when all may take part in them.

Perhaps the most gratifying features of the meeting are to be found in the reports of the Treasurer and the Chairman of the Membership Committee,—both showing that the Association has reached a new high-water mark in funds and in growth of membership.

With funds of considerably over \$55,000.00 in the treasury, and with a rapidly growing membership list, the general feeling is that the Association is in the middle of the prosperity high road, with an increasingly easy grade before it.

A less satisfactory feature of the meeting was the excessive entertainment, which, notwithstanding the discussions of the Boston meeting, still materially interfered with serious business.

Denver is so located as to afford opportunity for many short excursions to objects of interest, and the local committee were naturally anxious to have the visitors see their beautiful city to the best advantage. Theoretically these diversions were for the ladies only, but experience proved that, as in former years, the necessity for male escorts was so great as to seriously deplete attendance at the Section meetings.

At future conventions it is hoped that the Women's Section, by providing other work for the ladies, will cause the postponement of these diversions until after the serious business of the convention has been concluded.



ENTERTAINMENTS OF THE A. PH. A. CONVENTION.

The entertainments in honor of the visiting ladies of the American Pharmaceutical Association given by the ladies of the Denver and State Associations were on an elaborate scale and of such a character as to indelibly stamp Denver and its fair hostesses forever on the minds of every visitor.

The local women had organized themselves as the "Silent Partners" and the way they worked together in dispensing hospitality to the strangers within their gates showed them to be very capable partners indeed.

President Godding's reception was held Monday evening in the ball room of the Brown Palace Hotel, and was followed by dancing.

Tuesday morning the ladies and such of the men as could tear themselves away from the Section sessions were taken on a trolley ride to the foot hills, passing through several mining towns in the Clear Creek valley and stopping at Golden, one of the most beautifully situated mountain towns of Colorado, where is located the State School of Mines. As the car rolled along the scene was one for keen enjoyment; on the one hand the mountain streams, on the other the low lands covered with vegetable gardens, alfalfa fields and brilliant wild flowers stretching away to the foot hills backed by the mountain peaks, some snow-capped, some lost in the clouds and others clearly defined against the blue sky, and over all the brilliant sunshine, a picture impressing itself deeply in the memories of those unaccustomed to mountain scenery.

Tuesday evening was given to a complimen-

tary concert and picture show in the Trinity M. E. Church. The program of vocal, violin and orchestra music was well selected and the artists were warmly applauded, but probably the most interest centered in the piano playing of a little 12-year-old girl whose name did not appear in the program. At the close of the concert, Mr. E. G. Fine, a druggist of Boulder, Colo., showed a number of travelogue pictures which he had prepared from photographs taken in the Colorado mountains. Mr. Fine's descriptions were very interesting and he held his audience in rapt attention for the balance of the evening.

Wednesday morning the ladies were taken in automobiles on a "seeing-Denver trip," after which none were inclined to criticise the Denver people for boosting their home city.

In the afternoon of the same day special cars were provided to take the ladies to a matinee at Lakeside, where Belasco's play, "The Easiest Way," was presented by the Fealy-Durkin Stock Company.

On Thursday the autos were again pressed into service and a trip was made to Wilmore's Dahlia Farm, the finest of its kind in this country. Here were spread out in long beds dahlias from the common yard variety to those of immense size, beautiful gradations of color and unusual and wonderful structure, among which the visitors were allowed to roam at will. Blossoms were generously distributed among the ladies and a pleasant half hour was spent with the flowers. One particularly fine "fluffy ruffles" variety was named by the proprietor in honor of Dr. Rusby. On the return trip a stop was made at Inspiration Point, from which there is a fine view of the mountains and a panoramic view of the city.

In the afternoon of Thursday a six-hand euchre party was given in the parlors of the Brown Palace Hotel.

At 8 o'clock the ladies were given a toast banquet at the Albany Hotel. Two hundred ladies were seated at the prettily appointed tables. Mrs. R. H. McKenzie was charming as toastmistress, introducing the speakers with many witty and complimentary remarks suited to the occasion. The following toasts were responded to:

"From the Seats of the Mighty," Mrs. Shaffroth, wife of the Governor.

"Incompatibles," Mrs. Godding of Boston.

"Druggists' Sundries," Mrs. Grenfel, State Superintendent of Schools.

"The Corner Drug Store," Mrs. Storer.

"Bread Pills," Mrs. Robinson, a prominent political worker.

"Strangers Within Our Gates," Mrs. C. M. Ford, President of the Silent Partners.

The favors were dainty souvenir spoons bearing the picture of the Welcome Arch in the bowl.

This completed the program of entertainments planned especially for the ladies, although many private affairs were given during the week in honor of the visitors. The JOURNAL is pleased to officially convey the thanks of the ladies of the Association to the ladies of Denver and of the Colorado Pharmaceutical Association for their very generous hospitality.

On Friday the business sessions were discontinued so that the members might join in the trip to Glacier Lake, the road to which leads through the famous "Switzerland Trail of America." From 8 o'clock till noon the train carried the sightseers through picturesque canons, along mountain streams, the banks of which were dotted here and there with clumps of wild flowers, sighting occasionally a miner's claim, through mining villages nestled at the foot of the mountains; gradually rising higher and higher up the steep slopes and around the short turns; beyond, the higher peaks holding aloft their snowy heads; around us, the vegetation growing scantier with each ascending mile.

At last we arrive at beautiful Glacier Lake and leave the train with orders to form the "bread line" to the baggage car which is plentifully supplied with box luncheons and iced drinks. Mountain air is conducive to hunger and it was not long until the long line had been served and hunger appeased.

After lunch a photograph was taken of the entire party (about 500 people), then the return trip was commenced, with a repetition of the enjoyment of the going trip.

The train was scheduled for a stop at Boulder and the party was met at the train by a brass band, automobiles and special cars for a trip through the city. A visit was made to the campus of the State University, then on to the Chautauqua grounds, where the visitors were served with refreshments on the lawn and enjoyed a wonderful view of the city and mountains and plains beyond. The citizens

and druggists of Boulder made the two-hour stop very pleasant, and the thanks of the Association were voiced at the station by Mr. Walker of Texas.

Only a literary genius could so press our language into service as to adequately describe these mountains and the wonderful impression their ever-varying scenery makes on the mind of the traveler, but we believe none in the A. Ph. A. party failed to appreciate all the beauties of Colorado, and we know they all were appreciative of the lavish entertainment provided by the local druggists.

ANNA G. BAGLEY.

<>

BALTIMORE, MD., Aug. 11, 1912.

To the Editor:

In reading over the JOURNAL I saw mention of Dr. Charles Caspari, Jr., for Chief of the Bureau of Chemistry. He is THE man for the place.

Dr. Caspari taught me for three years at the University of Maryland, and I have never met a man with the knowledge, resourcefulness and fairness he possesses.

Could not resist the temptation to say a few words for him. Yours truly,

LAWRENCE S. WILLIAMS.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.

<>

EDWARD S. KELLEY.

Edward S. Kelley passed away July 13, 1912, in Worcester, Mass., after a short illness of pneumonia. He was born in Franklin, N. H., December 4, 1847, and came to Boston when a young man and learned the drug business, in which he continued all his life. He was a member of the Class of 1870 of the Massachusetts College of Pharmacy and was for seven years with T. Metcalf & Co. In 1870 he opened on Boylston street the first drug store in the then newly developed Back Bay district and remained in this loca-

tion for about thirty years, at first alone and later with William C. Durkee under the firm name of Kelley & Durkee. For the last five years he had been connected with Brewer & Co., of Worcester.

He became an active member of the Massachusetts College of Pharmacy in 1872, and a life member since 1891, also a trustee and first vice president in 1882 and 1883. He was a member of the Massachusetts State Pharmaceutical Association, the Boston Drug-gists Association and formerly a member of the American Pharmaceutical Association. He leaves two children, Elizabeth, wife of Raymond S. Fosgate, of Shrewsbury, Mass., and Dr. Jacob Sleeper Kelley, of Providence, R. I. Funeral services were held in Worcester, Monday, July 15, and the burial was at Franklin, N. H.

J. W. E.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—Resolution adopted at the Boston Convention, 1911.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.



ST. LOUIS BRANCH.

The July outing of the St. Louis Branch of the American Pharmaceutical Association was held July 17 at the Chain of Rocks, which is the source of the water supply to St. Louis. The members were provided with a special car through the courtesy of Prof. W. B. Montford, the chemist in charge of the department, and he personally conducted the sight-seeing trip, and with the assistance of Messrs. Kornfeldt and Robertson of the Bissell's Point Station, took the party over the entire system explaining the process of the water purification from a chemical point of view in detail. The outing was enjoyed both

from a pleasurable and educational standpoint. Among those who made up the trip were: Prof. Leo Suppan, A. C. Schulte, H. O. A. Huegel, Wm. K. Ilhardt, Chas. Gietner, Wm. Hickey, C. A. Buehler, Miss B. Cousens, Wm. Mackelden, P. L. Gain, A. J. Bretscher, Delta Coombs, W. A. Thomas, B. A. Burnett, Miss McCoussens, W. H. Lamont.

The August outing will be held August 10, to Shaw's Garden.

W. H. LAMONT, Sec'y.



NEW YORK BRANCH.

There was a meeting of the "Certification" Committee of the New York Branch of the American Pharmaceutical Association at the New York College of Pharmacy on Wednesday, July 24. Messrs. Bigelow, Dickman, Lascoff, Raubenheimer, Roemer and Weinstein (for Mr. Diamond) being present. The purpose of the meeting was to consider preliminarily a plan for certification of pharmacists. The committee will meet again in September to consider the matter further.

HUGH CRAIG, Sec'y.

Council Business

COUNCIL LETTER No. 23.

PHILADELPHIA, July 18, 1912.

Members of the Council:

Motion No. 46 (Election of Applicants for Membership from Nos. 236-285 inclusive) has received a majority of affirmative votes.

Motion No. 47 (Election of Members). You are requested to vote on the following applications for membership:

No. 286. Dayton Burt Garrison, Jr., Connell, Wash., rec. by C. W. Johnson and A. H. Dewey.

No. 287. William Arthur Clizer, 5023 Wall St., Spokane, Wash., rec. by C. W. Johnson and A. H. Dewey.

No. 288. Barry Franklyn Murphy, Demert Drug and Chemical Co., Spokane, Wash., rec. by C. W. Johnson and A. H. Dewey.

No. 289. Fred Clayton Downs, Hayden, Col., rec. by F. W. Nitardy and S. L. Bresler.

No. 290. William W. Green, Steamboat Springs, Col., rec. by S. L. Bresler and F. W. Nitardy.

No. 291. Herbert Lock, Central City, Neb., rec. by Charles R. Sherman and C. M. Ford.

No. 292. John Edward O'Brien, 1410 Daytonport St., Omaha, Neb., rec. by Charles R. Sherman and C. M. Ford.

No. 293. Frank E. Reynolds, Arapahoe, Neb., rec. by Charles R. Sherman and C. M. Ford.

No. 294. Ellsworth Lovejoy Redfern, State House, Lincoln, Neb., rec. by C. M. Ford and D. J. Fink.

No. 295. Wm. Joseph Meisburger, 3868 Russell Ave., St. Louis, Mo., rec. by H. M. Whelpley and J. W. Mackelden.

No. 296. Jacob Lieberstein, 2329 N. Union Pl., St. Louis, Mo., rec. by H. M. Whelpley and I. Ben. Miller.

No. 297. Jesse Edmund Koppenbrink, 400 Main St., Higginsville, Mo., rec. by I. Ben. Miller and H. M. Whelpley.

No. 298. Orval James Cloughly, 5601 Easton St., St. Louis, Mo., rec. by I. Ben. Miller and Arthur C. Schultz.

No. 299. Mrs. Mary A. Stoughton, 255 Smith St., Hartford, Conn., rec. by Chas. A. Rapelye and Thos. F. Main.

No. 300. Ralph Lincoln Wardin, Nevada, Mo., rec. by Charles Gietner and H. M. Whelpley.

No. 301. Samuel E. Ewing, Creston, Neb., rec. by Charles R. Sherman and J. H. Beal.

No. 302. Bertis E. Downs, Welch, W. Va., rec. by Alfred Walker and J. H. Beal.

No. 304. Karl O. Cyrus, 420 Fairfield Ave., Bridgeport, Conn., rec. by Chas. A. Rapelye and Thos. F. Main.

No. 305. Gustave O. Cartier, 780 Main St., Willimantic, Conn., rec. by Chas. A. Rapelye and Thos. F. Main.

No. 306. Walter Dickson Adams, Forney, Texas, rec. by Jacob Schrodtt and E. G. Eberle.

No. 307. John Helfman, 107 Eliot St., Detroit, Mich., rec. by Harry B. Mason and Joseph Helfman.

No. 308. Wm. Beukma, 2217 Glenarm Pl., Denver, Col., rec. by S. L. Bresler and F. W. Nitardy.

No. 309. Edgar R. Thome, care O. F. Schmid Chemical Co., Jackson, Mich., rec. by Chas. Caspari, Jr., and Hy P. Hynson.

No. 310. Mason Gaylord Beebe, 75 Church St., Burlington, Vt., rec. by Elie H. LaPierre and C. Herbert Packard.

No. 311. Irving Lewis Emerson, 361 Main St., Grand Junction, Col., rec. by F. W. Nitardy and Chas. M. Ford.

No. 312. Robert Smith Killey, 680 S. Mill St., Aspen, Col., rec. by F. W. Nitardy and Chas. M. Ford.

No. 313. John Zieg, 35 Second St., San Francisco, Cal., rec. by Fred I. Lackenbach.

No. 314. Curtis Darius Reed, Pomeroy, Ohio, rec. by Lewis C. Hopp and J. H. Beal.

No. 315. George F. Reiser, 1101 Washington St., Toledo, Ohio, rec. by John C. Wallace and J. H. Beal.

No. 316. Ernest C. Davis, 11 N. Howard St., Akron, Ohio, rec. by Frank H. Freericks and Edw. Voss, Jr.

No. 317. Charles O. Hoffman, Arcanum, Ohio, rec. by Frank H. Freericks and Edw. Voss, Jr.

No. 318. Ralph C. Benedum, Station A, East Liverpool, Ohio, rec. by J. H. Beal and Geo. B. Kauffman.

No. 319. F. D. Christian, Cor. Ohio Ave. and Poplar St., Sidney, Ohio, rec. by Geo. B. Kauffman and J. H. Beal.

No. 320. John B. Michels, El Paso, Ill., rec. by W. B. Day and J. W. England.

No. 321. Allen Thomas Stewart, Denton, Kansas, rec. by M. Noll and Robert Noll.

No. 322. Edward Albert Sinclair, Main St., Troy, Kansas, rec. by M. Noll and Robert Noll.

No. 323. Ernest Arias, Sergeant Hospital Corps, U. S. Army, Field Hospital No. 4, Fort Wm. McKinley, P. I., rec. by C. Cooper Young and Francis J. Eisenman.

No. 324. Gilbert H. Goosey, Sergeant 1st Class, Hospital Corps, U. S. Army, Camp John Hay, Benguet, P. I., rec. by Wm. B. Day and C. Cooper Young.

No. 325. Earl F. Greene, Sergeant 1st Class, Hospital Corps, U. S. Army, Camp Gregg, Bayambang, P. I., rec. by Wm. B. Day and C. Cooper Young.

No. 326. John Francis Leonard, Sergeant Hospital Corps, U. S. Army, Regan Barracks, Legaspi, P. I., rec. by Wm. B. Day and C. Cooper Young.

No. 327. Emanuel Newman, Sergeant Hospital Corps, U. S. Army, care Chief Surgeon, Philippine Division, Manila, P. I., rec. by Wm. B. Day and C. Cooper Young.

No. 328. Edward B. Sires, Sergeant Hospital Corps, U. S. Army, Camp Gregg, Bagrambang, P. I., rec. by C. Cooper Young and Wm. B. Day.

No. 329. Samuel Smelsey, Augur Barracks, Jolo, P. I., rec. by Wm. B. Day and J. W. England.

No. 330. James William Grose, Augur Barracks, Jolo, P. I., rec. by Wm. B. Day and J. W. England.

No. 331. Carl S. Benche, Jolo, P. I., rec. by Wm. B. Day and J. W. England.

J. W. ENGLAND,
Secretary of the Council.

415 N. 33d St., Philadelphia, Pa.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or typewritten.



GEORGE H. KNOWLTON,
From 728 Union St., Manchester, N. H.
To 782 Union St., Manchester, N. H.

HORACE O. DAHLIN,
From 6731 Reynolds, Pittsburg, Pa.
To 5406 Black St., East Liberty Sta., Pittsburg, Pa.

SILAS H. MOORE,
From 525 3d Ave., Sioux City, Iowa.
To 812 Jackson, Sioux City, Iowa.

DR. BYRON F. DAWSON,
From R. F. D. No. 1, Modesto, Cal.
To Corning, Tehama Co., Cal.

FRANCIS MCQUILLEN,
From 7301 Vincennes Road, Chicago, Ill.
To 7305 Vincennes Road, Englewood Sta., Chicago, Ill.

J. F. PEARSON,
From U. S. S. Solace, care Postmaster,
New York, N. Y.
To Cumberland Court, Annapolis, Md.

JESSE D. HODGES,
From Little Rock, Ark.
To residence unknown.

A. M. ROMERO,
From Oriente, Cuba.
To residence unknown.

W. L. SCOVILLE,
From 805 2d St., Detroit, Mich.
To 81 Melbourne Ave., Detroit, Mich.

J. W. SPENCER,
From Monroe, La.
To residence unknown.

H. A. LANGENHAN,
From 415 N. Park, Madison, Wis.
To 901 University Ave., Madison, Wis.

J. A. W. LUCK,
From 415 Hotel Arcade, Oakland, Cal.
To The Bachelors, 1448 Jackson St., Oakland, Cal.

J. M. LAWRENCE,
From Manila, P. I.
To residence unknown.

E. C. KAUFFMAN,
From Ft. Hancock, N. J.
To Field Hosp. No. 1, Ft. D. A. Russell,
Wyo.

R. E. DOOLITTLE,
From 109 Hillside Ave., Glen Ridge, N. J.
To Bureau of Chemistry, Washington, D.C.

CHAS. E. LATHROP,
From 1324 N. 24th St., Omaha, Neb.
To 3914 Davenport, Omaha, Neb.

SGT. JAMES SWEENEY,
From Col. Barracks, Columbus, O.
To Ft. Wayne, Mich.

HAROLD B. MEADE,
From 133 E St., Washington, D. C.
To 831 Allison St. N. W., Washington, D.C.

WILLIAM W. HALE,
From The Clarion, 1495 Newton, Washington, D. C.
To The Isabella, 1483 Newton St. N. W., Washington, D. C.

T. F. CANNON,
From 160 N. 5th Ave., Chicago, Ill.
To 319 W. Randolph St., Canal Sta., Chicago, Ill.

L. C. SIESS,
From Alexandria, La.
To Box 646, Hammond, La.

MISS RENNA MAE SMITH,
From 821 Macon, Ft. Worth, Texas.
To 700 Texas St., Ft. Worth, Texas.

ISAAC A. MYERSON,
From 1015 Tiffany St., New York, N. Y.
To Kelly St. and 165th, New York, N. Y.

M. T. MEIXNER,
From 14 W. Polk St., Chicago, Ill.
To Cook Co. Hospital, Chicago, Ill.

R. S. NOAKS,
From Teralto, San Diego Co., Cal.
To U. S. National Cemetery, Presidio of
San Francisco, Cal.

GLENN F. COLEMAN,
From 4172 E. 94, Cleveland, O.
To 516 E. 114, Cleveland, O.

CASSIUS M. RILEY,
From 2329 Central Ave., Alton, Ill.
To 3945 Magnolia Ave., St. Louis, Mo.

F. X. DEMERS,
From 39 Franklin St., Lawrence, Mass.
To 84 S. Broadway, Lawrence, Mass.

M. LEE ROBERTS,
From 357 Locust St., Valparaiso, Ind.
To 718 Broadway, care Bell Drug Store,
Gary, Ind.

ADOLPH J. FISCHER,
From P. O. Box 520, Santa Fe, N. M.
To 232 San Francisco, Santa Fe, N. M.

F. E. REYNOLDS,
From Arapahoe, Neb.
To Neleigh, Neb.

MRS. MARY A. STOUGHTON,
From 255 Smith St., Hartford, Conn.
To 752 Park St., Hartford, Conn.

W. F. GIDLEY,
From Macon, Ga.
To Lafayette, Ind., care Purdue Univ.

ROY M. SOULT,
From Pittsburg, Pa.
To Prospect, Pa.

ARTHUR NEVILLE,
From Ft. Mackenzie, Wyo.
To Military Hosp., Angur Barracks, Jolo,
P. I.

FRANCIS E. BIBBINS,
From 1945 Runckle St., Indianapolis, Ind.
To 4346 Cornelius Ave., Indianapolis, Ind.

MILTON T. ESTERLY,
From Ft. Mason, San Francisco, Cal.
To Ft. Winfield Scott, Presidio Sta., San
Francisco, Cal.

M. LEE ALBERTS,
From 357 Locust St., Valparaiso, Ind.
To 718 Broadway, care Bell Drug Co.,
Gary, Ind.

THE RULE OF DEMAGOGY.

The self-seeking demagogue starts out with the captivating doctrine of the rule of the people, but he ends with the dangerous despotism of one-man rule, the rule of himself. He seduces the unwary with his initial promise of the restoration of popular vote. And this is the easier to do by advocacy of schemes of direct government whereby the people are assured they may become their own rulers by the simple process of reducing to impotence their governors, their legislators, and even their judges. The people are to gain self-rule by destroying the independence and undermining the responsibility of the representatives they themselves have chosen to make, to interpret and to execute their laws. The initiative, the referendum and the recall thus lend themselves admirably to the demagogue's scheme of making himself an autocrat.

This scheme of direct government is today proclaimed as a mark of progressiveness in government. In fact, nothing could be more reactionary. It is as old as history. It was tried in ancient Greece and it failed. It was tried in ancient Rome and it failed. It led always to either anarchy or despotism.—*Dr. Jacob Gould Schuman.*

HOUSE-FLIES AND BACTERIA.

The ubiquitous house-fly stands convicted as a disseminator of pathogenic bacteria and a carrier of contagion. Ever since the investigation of the spread of typhoid fever in the United States military camps during the Spanish War of 1898, the evidence has been accumulating, until today there is no escape from the charges against this tantalizing insect. Every far-reaching probe into sanitary problems is liable to disclose conditions hitherto quite unsuspected; and the indictments already brought against the house-fly during the past few years charge responsibility for a long category of dysentery, diphtheria, erysipelas, contagious ophthalmia, cerebrospinal meningitis, anthrax and possibly small-pox, in addition to typhoid fever.

Whether all of these charges will stand in the light of scientific investigation remains to be seen. It is important, not so much in justice to the accused insect as because of the hygienic and prophylactic measures which are dependent thereon, that the questions here raised be authoritatively settled. In the case of the infections of fecal origin, particularly typhoid, the evidence appears to be quite complete. But are we not in danger of distracting attention from much more important factors by blindly encouraging a hyperenthusiasm for a single sanitary propaganda and fixing our hygienic viewpoint at a single center? This type of hysteria is by no means unknown in the history of public questions. It is constantly cropping out in the management of profound political and social problems. Perhaps it was with an appreciation of such tendencies that Dr. Torrey, of the Loomis Laboratory in New York City recently wrote:

"Although the guilt of the house-fly has been clearly established in certain instances as a typhoid-spreader, the relative importance of this vehicle of transmission as compared with the other well-known methods of transfer has been by no means clearly established. What is, perhaps, a timely warning of the danger, as regards the popular mind, of overemphasis being laid on this mode of transmission has recently been voiced by Chapin. He believes that unwarranted faith in the iniquity of these insects may lead to the neglect of the far more serious danger of contact infection, and that a failure of a decrease in the death-rate from typhoid after an enthusiastic antily campaign would tend to bring discredit on the well-grounded warnings of health officers. It is probable,' he concludes, 'that under certain conditions, as in military and civil camps, and in filthy communities without sewerage, insects, especially flies, may be an important factor in the spread of fecal-borne diseases, but there is no evidence that in the average city the house-fly is a factor of great moment in the dissemination of disease.—*Journal A. M. A.*

Do It Now!

Examine Your Stock of

Mulford's

Antitoxins

Bacterins

Vaccines

and order stock to complete assortment

With opening of schools the demand for Antitoxins and Vaccines becomes active. Don't be caught short of stock. We have up-to-date literature and mail-cards to help you. Our advertising and sales work will be particularly aggressive this Fall.

We have a new proposition, write for it.

Get Your Share!

H. K. MULFORD COMPANY

New York
St. Louis

Kansas City

Minneapolis

Philadelphia

San Francisco

Atlanta

Senttle

Chicago
Toronto

PHILADELPHIA COLLEGE OF PHARMACY

FOUNDED 1821

Offers a complete course in Pharmacy, Chemistry, Materia Medica, Botany and Pharmacognosy leading to the degree of Doctor in Pharmacy.

Also instruction in special branches and Post Graduate work.

For full information regarding entrance requirements, tuition, etc., address

J. S. BEETEM, Registrar, 145 N. 10th St., Philadelphia, Pa.

When your customers ask for Cement they want

MAJOR'S CEMENT



It mends everything and sticks to everything but the druggist's shelves. Sells too fast to stick there.

Send for advertising matter and free offer

MAJOR MANUFACTURING COMPANY

461 Pearl Street

NEW YORK CITY

SAL LAXA S & D

You know the formula

It's on the label in full

We know the drugs used are pure

and are combined in the right proportion

Thousands of physicians know that

Sal Laxa S & D is

the ideal, palatable, saline laxative

Three sizes, \$2, \$4, \$8. Your Jobber can supply it

SHARP & DOHME, Baltimore

New York

Chicago

St. Louis

Atlanta

New Orleans

Philadelphia

The Roessler & Hasslacher Chemical Co.

100 William Street, New York

invite the attention of the Pharmaceutical Profession to their new series of

Peroxygen Products, or Active Oxygen Preparations

VIZ:

SODIUM PERBORATE, a powder which, dissolved in water, furnishes instantaneously **Hydrogen Peroxide Solution** of alkaline reaction, a non-irritant to mucous membrane, even if applied in powder form. The powder is eight times as strong as ordinary H_2O_2 .

ZINC PEROXIDE, odorless fine powder, antiseptic, bactericide, used in surgery, dermatology, etc.

MAGNESIUM PEROXIDE, for internal use, non-toxic tasteless powder, it replaces bismuth salts in intestinal disinfection.

CALCIUM PEROXIDE, antacid and germicide.

STRONTIUM PEROXIDE, a dermatological agent.

PEROXIDE ZINC SOAP, U. S. Patent 787776, "Life to the Skin," contains actually 10% $Zn O_2$, the only real Peroxide Soap, complying with requirements of National Pure Food and Drugs Act. An ideal Skin and Toilet Soap.

All the above have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

ORDERS FILLED BY THE WHOLESALE DRUG TRADE.

To Colleges of Pharmacy

Do you know that we make a specialty of importing "DUTY-FREE" glassware, apparatus and chemicals for colleges and universities—sending our own representative abroad each year to make our selections?

Do you realize that the German glassware is immensely superior to the American product, and costs much less?

Do you realize how little trouble it is to import your goods? No more than to order from a local dealer.

Tell us what you want—select from any catalogue—and we will quote figures that will surprise you.

THE KAUFFMAN-LATTIMER CO.

COLUMBUS, OHIO

ST. LOUIS COLLEGE OF PHARMACY

DAY LECTURES AND DAY WORK

THIS COLLEGE was organized and is managed by an association of pharmacists to provide a thorough course of pharmaceutical instruction for the young men and women who desire to qualify themselves as pharmacists.

FACULTY

OTTO AUGUSTUS WALL, Ph. G., M. D., Professor of Materia Medica, Pharmacognosy and Botany.
 JAMES MICHENER GOOD, Ph. G., Hon. M. D., Ph. M., Professor of Theory and Principles of Pharmacy.
 FRANCIS HEMM, Ph. G., Hon. M. D., Professor of Practical Pharmacy.
 HENRY MILTON WHELPLEY, Ph. G., M. D., Professor of Microscopy and Dean of the Faculty.
 CHARLES EDWARD CASPARI, A. B. Ph. D., Ph. G., Professor of Chemistry and Physics.
 OTTO AUGUSTUS WALL, Jr., Ph. B., M. D., Instructor in Pharmacognosy and Lecturer on Accidents and Emergencies.
 EUGENE PEYTON COCKRELL, Ph. B., M. D., Instructor in Microscopy.
 WILLIAM HAMILTON LAMONT, Ph. G., Lecturer on Commercial Pharmacy.
 WILLIAM K. ILHARDT, Ph. G., Ph. C., Instructor in Theoretical Pharmacy.
 JOHN W. MACKELDEN, Instructor in Microscopy.
 FRANK ALLEN HAINES, Ph. G., Ph. C., Assistant in Microscopy.
 GEORGE LANG, Jr., Instructor in Chemistry.

The Forty-eighth Annual Session opens September 17, 1912, and continues seven months.

For further information write to the College, 2105-2110 Locust Street, ST. LOUIS, MO.

NORTHWESTERN UNIVERSITY SCHOOL OF PHARMACY

¶ A university school in the heart of Chicago, the educational and commercial center of the Middle West. Instruction laboratories and library give the best to be had. Solid courses in Ph. C. and Ph. G. degrees. The school cannot supply the demands for its graduates. A fine esprit de corps with hearty co-operation of faculty and students. Write now for "Typical Lessons in Pharmacy."

NEXT SESSION OPENS SEPTEMBER 23.

CHAS. W. PATTERSON, Secretary

Room 410, Northwestern University Building, Chicago, Illinois

THE SCHOOL OF PHARMACY of the UNIVERSITY OF ILLINOIS

CHICAGO COLLEGE OF PHARMACY

The Fifty-third session begins September 17, 1912.

Courses leading to the degree of Graduate in Pharmacy and of Pharmaceutical Chemist are offered.

For announcement or other information, address

W. B. DAY, Actuary

Michigan Boulevard and Twelfth Street, Chicago, Illinois

PITTSBURGH COLLEGE OF PHARMACY SCHOOL OF PHARMACY UNIVERSITY OF PITTSBURGH

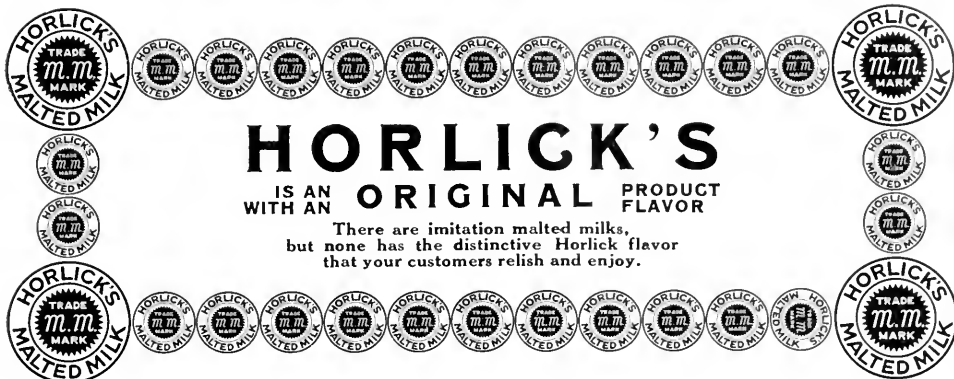
Offers a two years course leading to the degree of Graduate in Pharmacy.
 Three years for the degree of Doctor in Pharmacy.

For catalogue address Dr. J. A. Koch, Dean, Pittsburgh, Pa.

DEPARTMENT OF PHARMACY—UNIVERSITY OF MARYLAND (MARYLAND COLLEGE OF PHARMACY 1841-1904)

Lombard and Greene Sts., Baltimore Md.

Complete Course of Lectures and Laboratory Instruction, covering two sessions of thirty-two weeks each. Catalogue giving full information mailed on application to the Dean.



MASSACHUSETTS COLLEGE OF PHARMACY

CORNER OF ST. BOTOLPH AND GARRISON STREETS : : : : BOSTON, MASS.

The year begins the last week in September and ends the third in May.

Offers courses of instruction covering two and three years, and confers the degrees of Doctor of Pharmacy (Pharm. D.) and Pharmaceutical Chemist (Ph. C.).

A general education equivalent to the completion of one year in a high school, as shown by certificate or examination, is required for entrance.

Open to both sexes. All courses have compulsory laboratory work connected.

The demand for graduates of this school is in excess of the supply

SCHOLARSHIPS. The Massachusetts State Pharmaceutical Association, the Eastern Drug Co., the Brewer & Co., the Robert W. Greenleaf and the Julian W. Baird Scholarships are open to students of the school.

EMPLOYMENT. On application from prospective students the Dean will be pleased to assist in securing situations in drug stores, where the students will be allowed the necessary time to attend one or more courses.

For further information and catalogue, write to

THEODORE J. BRADLEY, B. S., Ph. G., Dean

SPECIAL ATTENTION.—Drug stores (snaps) for sale and trade in 48 states. Drug stores handled. Drug jobs in 48 states. Physicians, dentists, veterinarians, nurses furnished and located. Established 1904. Strictly reliable. Gilt edge references. Let me know your wants. F. V. KNIEST, R. P., Omaha, Nebr.

N.Y.Q.

COCAINE
MORPHINE
QUININE
POTASSIUM IODIDE
DIACETYL-MORPHINE
BISMUTH SUBNIT.
THYMOL IODIDE
ACETANILIDE, C.P.
STRYCHNINE
CODEINE

Mother Nature places in our hand the crude basis of medicinal chemicals, but man must himself supply the skill that converts them into valuable agents. It is the varying degrees of such skill that determine the grade of the finished production. In the case of **N. Y. Q. Products**, knowledge and effort have combined to give our goods a Purity that is proverbial, and that well justifies your specification of this brand.

NEW YORK QUININE AND CHEMICAL WORKS, LTD.
NEW YORK CITY

400

THE NATIONAL FORMULARY

The Standard of the Food and Drugs Act

In Cloth Binding, plain	\$1.50 per copy
In Cloth Binding, interleaved	1.75 per copy
In Sheep Binding, plain.....	1.85 per copy
In Sheep Binding, interleaved.....	2.00 per copy

For Sale by Book Dealers and Wholesale Druggists

A GOOD INVESTMENT

¶ Complete Sets of the Proceedings of the American Pharmaceutical Association are becoming rare.

¶ No other set of volumes relating to the pharmaceutical Science of equal comprehensiveness is available in the English language.

¶ In a few years complete sets will sell at a high price, and the purchase of them now will be a good investment from the financial standpoint alone.

NOTE THE DISCOUNTS

For any more than thirty-two volumes a discount of *sixty percent*.

For any twenty-three to thirty-two volumes a discount of *fifty percent*.

For any sixteen to twenty-two volumes a discount of *forty percent*.

For any nine to fifteen volumes a discount of *thirty percent*.

For any four to eight volumes a discount of *twenty percent*.

For any two or three volumes a discount of *ten percent*.

PRICES OF VOLUMES IN STOCK ARE AS FOLLOWS

		Paper Cover	Cloth Bound
1851, 1852, 1853, 1854, 1855.....	each	\$0 13	\$....
1857	"	20	25
1858, 1864, 1865	"	38	....
1858, 1860, 1862, 1863, 1864, 1865.....	"		50
1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873 ..	"	50	75
1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883	"	1 25	1 50
1884, 1885, 1886, 1887.....	"	1 75	2 00
1888, 1889, 1890.....	"	2 50	2 75
1891, 1892, 1893	"	5 00	5 50
1894	"	6 00	6 50
1895.....	"	5 50	6 00
1896 to 1910..	"	5 00	5 50

COMPLETE YOUR SETS NOW

ADDRESS

J. H. BEAL, General Secretary, Scio, Ohio

United States Pharmacopœia

Eighth Decennial Revision

The standard authority through the passage of the Food and Drugs Act and used as a reference book by students of pharmacy throughout the United States.

Cloth Bound Copies	-	\$2.50
Sheep Bound Copies	-	\$3.00

Address Any Book Dealer or Wholesale Druggist

TAKING ADVANTAGE OF PUBLICITY.

Millions of dollars are spent annually to give publicity to a wide variety of articles for which the drug store is the natural avenue of distribution. But is the druggist making the most of the opportunity? That he occupies a strategic position every manufacturer knows. People are being sent to him as they never were before; but is he fostering the movement? Just glance at the advertising pages of any popular magazine and see for yourself the barrels of money that are being spent to create business for the dealer who is wise enough to handle the goods. What a mistake, then, what a pity, to let all these expenditures go on without trying to derive from them those advantages that they are intended to convey to the druggist! Let a proprietor sell what make of goods he will, but let him also carry advertised articles, the kind that people are being educated to buy and order spontaneously.

Any druggist who fails to arrange at intervals a window display devoted to modern advertised goods is missing an opportunity to make his store the place of the hour, the modern up-to-the-minute shop, where things in popular demand can be had. He fails to see that the manufacturer is sending customers to his store. By his very inertia, he obstructs instead of quickens the movement of trade to the retail pharmacy. The druggist who fails to link his store in the minds of the people with the leading national producers, is making one big mistake. As well bury our faces in the sand as be blind to the enormous influence of the advertising manufacturer. He reaches more homes for you than you can reach yourself. And never has the manufacturer of popular articles been more eager to coöperate with retailers for the creation of new business than he is to-day.—*Bulletin of Pharmacy*.

COMPARE YOUR PRICE LISTS

A CAREFUL STUDY

*Prac-
tically
85 %
Of
Lilly
Products
Are
Subject
To
Best
Discount
40 %
Through
Your
Jobber*

*Study
The
Parts
Of
Other
Lists
Subject
To
"Best"
Dis-
counts*

of our price list will show you that a very large percentage of your pharmaceutical requirements are subject to 40 per cent. discount without contract obligation, through your jobber. Net prices to all retailers on articles in PART II., which is relatively small, are on the same net basis as commonly given by competitors to their preferred customers who are under contract to buy a given quantity direct within a specified time.

IN VIEW OF THESE FACTS

does it seem wise to obligate yourself to buy a large amount of pharmaceuticals direct from the manufacturer within a definite period when such low and liberal terms can be secured at any time through your jobber by specifying Lilly?

COMPARE PRICE LISTS

STUDY your past purchases and see if Lilly specifications through your jobber will not help you to keep better stock, lower your liabilities and give you more cash at the end of the year.

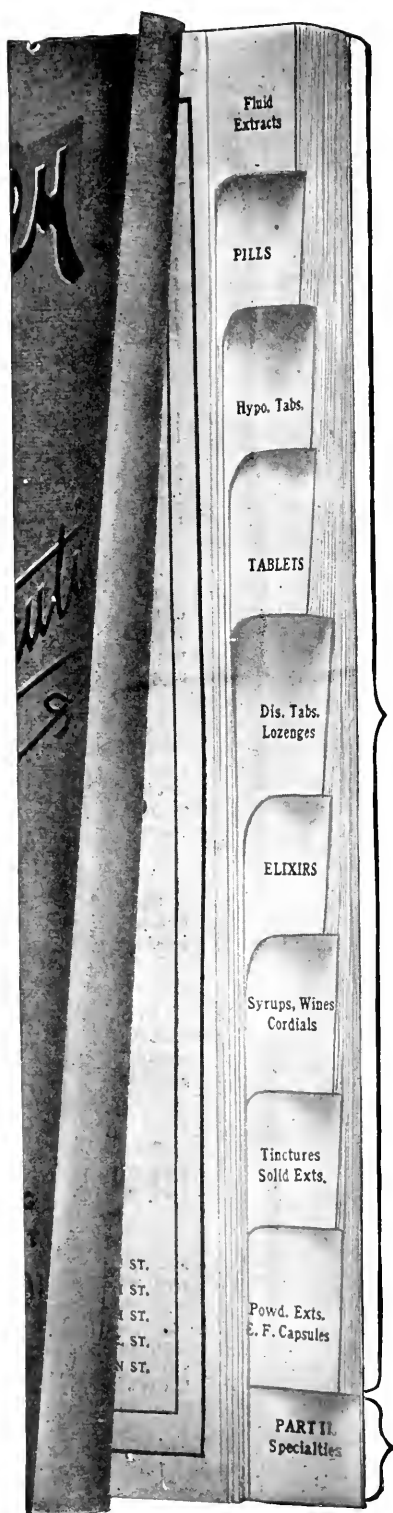
*YOUR JOBBER CARRIES THE
COMPLETE LILLY LINE :: ::*

ELI LILLY & CO.

INDIANAPOLIS
NEW YORK

CHICAGO
ST. LOUIS

KANSAS CITY
NEW ORLEANS



NEW FOURTH EDITION

A Text-book of Botany and Pharmacognosy

By HENRY KRAEMER, Ph.B., Ph.D.

Professor of Botany and Pharmacognosy, and Director of the Microscopical
Laboratory in the Philadelphia College of Pharmacy

This valuable work will enable the pharmacist to identify and pronounce upon the quality of the vegetable drugs and other vegetable products which he handles, and to comply with the requirements of the new Pure Food and Drugs Act.

As a reference book for pharmacists and as a hand-book for food and drug analysts, this volume will prove invaluable.

A most important feature, particularly in view of the new Pure Food and Drugs Act, is the part on powdered vegetable drugs and foods—over two hundred of these being described and illustrated, accompanied by a key for their identification.

Chapters on the cultivation of medicinal plants and microscopic technique will also prove of importance.

Part one is devoted to the consideration of the distinct characters of the main groups of plants. Part two to the crude drugs official in the United States Pharmacopoeia, including the non-official drugs, and to the subject of powdered drugs and foods. Part three gives various classes of reagents with the technique involved in the sectioning and mounting of specimens.

Octavo—888 pages—344 plates—2,000 figures
Cloth, \$5.00—Fourth Edition

J. B. LIPPINCOTT COMPANY
Publishers Philadelphia

A COMPARISON

Is All You Need to Reach a Decision

SPECIFY MERRELL

QUALITY Fluid Extracts and Normal Tinctures bearing the Merrell label are The Highest Type of Fluid Medicine.

BECAUSE in their manufacture we recognize the fact that the therapeutic value of many drugs depend upon constituents that are volatilized, easily oxidized, decomposed or rendered insoluble by the ordinary process of drying or by long or imperfect storage—

BECAUSE in all such cases we use the green or fresh root, bark or plant, gathered especially for us in its prime—

BECAUSE the proper menstruum, containing sufficient alcohol to extract, preserve and hold in permanent solution all the active principles, is always selected to meet the peculiar requirements of each drug—

BECAUSE of their uniform strength, determined by assay and physiological tests, and positive therapeutic efficiency.

PRICE Ten per cent from the Merrell 1912 Price List saves you money as compared with any legitimate competition. And you buy "as wanted" without contract or obligation as to quantity, at better prices than are called "preferred."

Here are just a few:

	MERRELL		COMPETITION	
	Trade Price Subject to 10 per cent	Net cost	List Price Subject to 40 per cent	Net cost
FLUID EXTRACTS				
Arnica Flowers	\$.95	\$.86	\$1.60	\$.96
Cascara, Bitter or Aromatic.....	1.10	.99	2.00	1.20
Ergot, U. S. P. (Physiologically tested)	3.50	3.15	6.00	3.60
Ginger, U. S. P	1.35	1.22	2.25	1.35
Rux Vomica, U. S. P.	1.00	.90	1.75	1.05
Sarsaparilla Compound for Syrup...	1.00	.90	1.75	1.05

VALUE Specify Merrell on your orders and see that your jobber sends the Merrell Quality at the Merrell Price. It is to YOUR interest that he does. So insist on Merrell and save that ten per cent.

The Wm. S. Merrell Chemical Co.
CINCINNATI

The Best Drug Store Insurance

The Colorado Insurance Commissioner lately said:

"Insurance to the average citizen is rather an uninteresting and prosaic subject."

"until a loss arises"

This we know from experience to be the exact truth. It explains why so many druggists have insufficient and sometimes unreliable insurance.

If you have insurance, *why not have enough?*

If you have insurance, *why not have the very best?*

Enough insurance means up to at least 80 per cent. of your property value. The best insurance as its very first essential, requires state supervision and ample capital.

Considering the fact that we limit our insurance to the widely scattered property of retail druggists, our Capital and Surplus of nearly \$300,000.00 makes us undoubtedly the strongest Company in this entire country with which druggists can place their insurance.

We are the Strongest

We write insurance at the very lowest premium rates consistent with safety.

Secure the Best Insurance

WRITE TO

The American Druggists Fire Ins. Co.

1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

Licensed and Resident Agents for Thirty-one States

The Journal of the American Pharmaceutical Association

Volume I

OCTOBER, 1912

No. 10

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

The Sixtieth Annual Convention

Held at Denver, Colorado, August 19-24, 1912

The Sixtieth Annual Convention of the American Pharmaceutical Association was held in the handsome and conspicuously clean capital of Colorado, Denver, "The Queen City of the Plains," beginning Monday, August 19, 1912, and continuing through to Saturday, August 24. The headquarters of the Association were at the Brown Palace Hotel, where the various sessions, except the first general session, were held. The Association had not met in Denver since 1895, a period of seventeen years, and the pharmacists of the "Centennial State" showed their appreciation of its return by the heartiness of their welcome, the elaborate preparations made for the entertainment of their visitors, and their attendance upon and interest in the various sessions held. While the attendance of the Eastern pharmacists was not up to the usual mark, by reason of the great distance to be traversed in reaching the Rocky Mountain region, and the cost in time and money involved, the attendance of the pharmacists from the Middle West and the Pacific Coast made up for this, and it was fully up to the average. The meeting was notable, among other things, for the establishment of a House of Delegates, and of a new Section on Pharmacopoeias and Formularies. Provision was also made for the establishment of a Women's Section or Auxiliary. The meeting was also notable for having the largest list of new members of any previously held, some 408 applications being accepted. The weather conditions in Denver



were perfect throughout the meeting, and added much to the enjoyment of the members in attendance. The entertainment features were handsome and attractive, and particular attention was given to the enjoyment of the ladies. The great Rockies, rising in majesty almost at the city's gates, and dotted thus late in August with numerous snowdrifts glistening in the morning sun, were a constant source of delight to the visitors—at first in prospect, later in realization, when the program called for a whole day spent in penetrating the mountains and enjoying their wondrous beauty and crisp, invigorating air. So alluring was the West, in fact, that many remained after the meeting was over to visit Colorado Springs, Pike's Peak and other points of attraction in Colorado, Salt Lake City, Yellowstone Park, etc.

MINUTES OF THE GENERAL SESSIONS.

FIRST SESSION—*Monday Afternoon, August 19, 1912.*

The first general session was called to order at 3:20 p. m., by President J. G. Godding, of Boston, in the auditorium of Trinity M. E. Church, on Broadway. After the President had asked President-elect William B. Day, of Chicago, and Ex-President E. G. Eberle, of Dallas, Texas, to come forward and take seats on the



rostrum, he referred to the propriety, before engaging in any great or important undertaking, of asking Divine guidance, and invited the Rev. A. C. Peck, of Denver, to invoke the blessing of the Deity upon the deliberations of the assemblage.

The President then called upon the Governor of the State of Colorado, the Hon. J. F. Shafroth, to deliver the address of welcome for which he was scheduled on the program.

Governor Shafroth spoke at some length, and began by frankly admitting that he knew nothing about pharmacy, and would have to read a good deal about it before he could tell this convention of pharmacists anything about it. He had confessed as much to the Mayor of the city of Denver, who usually accompanied him on these occasions, and he was much more confident, claiming that this subject was his "specialty," and he was sure he could handle it with skill. The Governor went on to say that the duties of his office were such that he could never write any finished addresses on occasions of this sort, but whatever he said must come spontaneously, from the inspiration of the moment. Anyway, his experience had been that, whenever he tried to write a formal address, after he had revised it for the third or fourth time, he generally came to the conclusion that it



was not worth reading, and threw it away. His own attitude in this respect was very well illustrated by the story of the young clergyman who, desirous of making a favorable impression, started off by preaching what he considered a very learned discourse, after which he mingled with his congregation, in the hope of hearing some expression. Finally he approached an elderly sister and invited her criticism upon his sermon, eliciting the curt objection, "Well, you read it!" Admitting that this was a defect, and pressing for further criticism, she said, "You didn't read it well." Likewise admitting this fault, he insisted upon knowing what else was the matter with his sermon, and got for his pains the reply, "It was not worth reading, anyway."

The Governor then proceeded to extend a warm welcome to the Association on behalf of the people of Colorado, whose official representative he was, and paid tribute to the merits and usefulness of the American Pharmaceutical Association, as illustrated in its long and honorable career.

The Governor then launched into a veritable glorification of the State of Colorado—its climate, its mountains, its scenery, its precious and baser metals, and especially the great possibilities of its undeveloped water-power and its fabulous wealth of coal

deposits. He said that the United States Government Geological Survey reported that Colorado had 371 billions of tons of coal within her borders, while the total coal consumption of the world was only a billion and a quarter tons annually, which meant that Colorado alone could supply the whole world with coal for three hundred years to come. Colorado's water-power, coming from a maximum height of 5,000 feet, coupled with this prodigious coal supply, offered a foundation for manufacturing enterprises almost beyond belief for magnitude. Also, the mountains of Colorado contained iron ore in unlimited quantities, and this, with her great coal area, forecasted the eventual development of a steel and iron industry such as the world had never seen.

The Governor concluded by depicting the glory of Colorado's noted mountain scenery—especially the "Royal Gorge," with its perpendicular walls of rock rising to the majestic height of 2,700 feet on either side, and described how Colorado had come to be known as "The Playground of America." He appealed to the members not to rush away upon the adjournment of this meeting, but to remain and see for themselves the wonders of the great Rocky Mountains, and enjoy the delights of the climate and scenery, in which event he felt sure they would wish to return again.

The President called on Prof. Joseph P. Remington, of Philadelphia, to respond to the address of welcome just made by the Governor.

Prof. Remington, apparently to relieve somewhat the Governor's embarrassment at having to admit that he knew nothing about pharmacy, said that he was not alone in that respect, as illustrated by two incidents in the early history of pharmaceutical legislation in the Eastern States. When a pharmacy bill was brought before the New Jersey Legislature, for instance, a member from one of the rural districts moved that it be "referred to the Committee on Farm and Farm Products;" and in Pennsylvania, when a similar bill came before the Legislature, a member moved that it be "referred to the Committee on Vice and Immorality."

Prof. Remington said that the Association was thrice pleased in coming to Colorado again, and referred to the spirit of the beautiful "Welcome" arch that greeted visitors to the city of Denver as they stepped from the cars.

This, he said, was the fourth time he had come to Denver, and every time he witnessed some great improvement. He was impressed with the cleanliness everywhere apparent. In this respect, Denver was decidedly different from some of the Eastern cities—although they had for Mayor in his own city of Philadelphia one Rudolph Blankenberg, who, because of his propensity to "clean up things generally," was known as "The Great Dutch Cleanser." Denver had everything that was beautiful and agreeable to commend it and make it a city of note among all the cities of the world. In conclusion, Prof. Remington thanked the Governor on behalf of the Association for his warm words of welcome, and assured him that no pharmacist would leave the city of Denver without a full appreciation of its beauties and its worth.

The President said as the members of the Association were to be residents of the city of Denver for the next few days, they were particularly fortunate in having the Hon. H. J. Arnold, Mayor of the city, present, and he would now ask him to make an address of welcome on behalf of the municipality.

Mayor Arnold began by parrying the assertion made by the Governor that he would explain everything about pharmacy. He said that the Governor was now a candidate for office, and could hardly be expected to stick to the exact truth. The Governor had been in politics for a number of years, and they had sent him to Congress until he got tired and resigned, and then they elected him Governor, afterwards re-electing him to that office, and now he said he was going to the Senate. Some time, away back in the political life of the Governor, some one had given him the name of "Honest John," and he had been known by that name so long that the Governor himself believed it. He had recently talked with the Governor about this "misnomer," and had suggested the propriety of proof on the subject, but the Governor had replied that "It didn't need any proof; he admitted it."

The Mayor went on to say that in welcoming any association to Denver it was important that he should only state things that were true, as the delegates would have a chance to check his statements. Not so with the Governor, however, because he knew that a very small percentage of a visiting delegation would ever have an opportunity to know Colorado thoroughly, so he could make his statements as broad as he pleased. Take as an illustration what the Governor stated about the "Royal Gorge," with its perpendicular walls towering above the river's bed for 2,700 feet. Who, he asked, would ever attempt to measure those walls, to see if that statement was correct? They could only take the Governor's word for it. Adverting to the hope expressed by Prof. Remington, of Philadelphia, in response to the Governor's address of welcome, that the Mayor would turn over the keys of the city to the visiting delegates, he replied that his administration had succeeded one that had been in power for a number of years, and they didn't leave any keys. So the only thing they could do in Denver was to substitute smiles and words of good cheer and welcome—a welcome of sunshine, a welcome that found its reflection on yonder mountain tops; and in the purest and best of air. Denver was largely a convention city, because it was situated halfway between the East and West and a mile high above sea-level, away from the earth's dust that settled in the lower strata of the atmosphere.

In conclusion, the Mayor on behalf of the city of Denver extended the heartiest of welcomes to this Association. He did this on behalf of all the people, because in Denver they had no cliques, no class distinctions. The man who carried his dinner-pail was as ready to greet the pharmacists of the country as the man who owned a drug store on the corner. He expressed the hope that the members would make themselves at home and feel that they were of Denver's people.

The President called on A. V. Pease, of Nebraska, to respond to the address of welcome by the Mayor.

Mr. Pease began by saying that as he listened to the words of welcome by his Excellency the Governor, and his Honor the Mayor, he was reminded of a convention he had the pleasure of attending some months before in the city of Dallas, Texas. This was an Association of the Advertising Clubs of America, and he would like to propose the names of the Governor and Mayor for honorary membership in that club. As he had listened to the cordial greetings and kindly words of welcome, he realized why the Mayor had received such a large expression of confidence from those who knew him best. He was reminded of another man of

the name—the great English author and poet, Sir Edwin Arnold. Those who remembered his "Light of Asia" would recall the self-sacrifice of the great Buddha in feeding himself to a famished tiger he found by his pathway in the jungle, to save her life and that of her cubs; and then afterwards converted himself into a loaf of bread and fed a starving widow and her children. He was sure the Mayor would likewise be equal to any occasion that confronted him.

The welcome accorded in the superlative terms employed by the Governor and Mayor reminded him of the banquet where the toast "The United States" was proposed, and one man got up and said: "The glorious United States! Bounded on the north by the Arctic Ocean, on the east by the rising sun, on the south by the Antarctic Ocean, on the west by the setting sun." Then, after a while, when the guests had drunk still deeper, and imagination knew no bounds, a reveler got up to respond to this inspiring toast, and exclaimed: "The United States! How glorious they are! Bounded on the north by the Aurora Borealis, on the east by the Dawn of Creation, on the south by the Precession of the Equinoxes, on the west by the Day of Judgment!"

Mr. Pease concluded with the expression of the hope that those present here might not be past Divine aid before the realization of the hope held out by the word "Mizpah," the word of farewell that met the gaze of visitors from the city side of the "Welcome" arch as they departed from Denver, which word being interpreted meant, "God watch between you and me until we meet again."

The President stated that the next speaker to greet the Association would be Dr. Sherman Williams, President of the Colorado State Board of Health.

Dr. Williams spoke as follows:

I feel very highly flattered and complimented that I should be asked here to address this assemblage of representative pharmacists and chemists of America.

As a physician I am more or less familiar with the work of the pharmacist and chemist as well as have some knowledge of the many trials, tribulations and hardships of your profession. I believe I can fully appreciate from a recreative point of view as well as a scientific one the advantages and benefits which are to be derived from a meeting of this character. It gives an opportunity to lay aside the arduous duties which constantly beset you and diverts your minds to the pleasant side of your profession and by the interchange and exchange of thought you return to your homes and labors with new energy and new ideas which benefit you in your every-day routine.

I congratulate you upon your selecting Denver and Colorado as your meeting place of this American wide Association. You have selected the only city in America lighted by the everlasting rays of sunshine and reposing at the foot of the eternally snowcapped mountains of the beautiful Rockies, whose inhabitants may lift their eyes heavenward and enjoy a beautiful, inspiring panoramic scene and yet breathe the pure and life giving ozone from these picturesque snowy peaks, and who the year through may rest peacefully in the arms of Morpheus without the torrid oppression and discomfort with which many of you are too familiar.

You have been welcomed by the Governor of this great state and the Mayor of this beautiful city. I am here to welcome you as President of the Colorado

State Board of Health, as head of the Pure Food Department of the State of Colorado and representative of the Medical Profession of the city of Denver and State of Colorado, and I assure you on behalf of all these organizations that we are glad to have you and that you are in reality welcome.

I am quite certain that if any of you are unfortunate enough while here to need your appendix amputated, you will find the surgeons of Denver equal to the emergency and I am sure that your local brother pharmacists will be able to furnish you with ample medication to relieve the overstrain of excessive altitude.

The State Board of Health and the Pure Food Department of the state have made especial efforts to see that the food supply and the drugs furnished you are of the highest quality and for several months all of the employes of the Health Department have been bending their energies in this direction, and if you find any fault in this regard, I promise you proper retribution upon the person furnishing you the same.

As a physician, I am proud of the progress and energy which my profession has made in the last thirty years. There has been much done in the discovery of new measures and in their prophylactic and curative applications. Thirty years ago little was known of bacteriology, and nothing of the seras and vaccines. Nothing was known of the cause or how many of the common diseases were transmitted. It is since that time that we have learned that malaria and yellow fever were the result of an infection by the mosquito and that by eliminating this insect, these two diseases were stamped out. It is more recently that we have learned of the dangers connected with the deadly house fly.

You probably remember that in the year 1898, during the Spanish-American War, there were more soldiers who died from typhoid fly infection than were killed by Spanish bullets. In 1911, there were encamped around the Southern border of the United States some 12,000 United States soldiers, and there was one case of typhoid fever among them, and no deaths. In 1898, 10,000 soldiers were encamped around the northern border of the country, and there were 2,000 and some odd hundred cases of typhoid fever, with 500 deaths resulting.

It always remains for a few men like the immortal Koch, Pasteur, Ehrlich, Mechnikoff, Wright, Wasserman and Flexner, who tower above the rest of the profession like cathedral spires above the surrounding dwellings to demonstrate many of the great truths which have brought the medical profession into the light of day.

So it has been with your profession. You have all toiled in the vineyard and have done your part, yet a few names of your profession stand prominently above all others, as the great leaders and who are chiefly responsible for the progress made in your work.

The physician owes you much for the important part which you perform in the world of the healing art, and I believe is ever grateful and reciprocal in his attitude toward your profession.

We know that the efforts of the chemist and pharmacist were vital factors in the framing and passage of the pure food and drug laws, not only of the United States, but of the individual states as well. In this work there stands out prominently above all others the name of one of your members, that great pure food and drug apostle and celebrated chemist who preferred right and principle to position.

Dr. Wiley has done more, not alone for the enactment of pure food and drug laws, than any other living or dead American, but more for their enforcement. His name is a synonym today in the United States for what is right and pure in drugs and foods.

The Colorado State Board of Health with Dr. Wiley is opposed to adulterations and misbrands. The public is entitled to know the contents of the package it pays for. We do not oppose the use of preservatives because of their ill effects on the consumer, but because they prevent the consumer from knowing the true nature of the product he is consuming, because they are capable of making a foul, decomposed, putrid article appear in the guise of one that is wholesome.¹

In connection with the performance of the duties of the pharmacist and physician, I have been very much impressed with the appropriateness of a little poem by Rudyard Kipling, entitled "If:"

IF.

If you can keep your head when all about you
Are losing theirs and blaming it on you;
If you can trust yourself when all men doubt you,
But make allowance for their doubting, too:
If you can wait and not be tired by waiting,
Or being lied about, don't deal in lies,
Or being hated don't give away to hating,
And yet don't look too good, nor talk too wise.

If you can dream—and not make dreams your master;
If you can think—and not make thought your aim,
If you can meet with Triumph and Disaster
And treat those two impostors just the same:
If you can bear to hear the truth you've spoken
Twisted by knaves to make a trap for fools,
Or watch the things you gave your life to, broken,
And stoop and build them up with worn-out tools.

If you can make one heap of all your winnings
And risk it on one turn of pitch-and-toss,
And lose, and start again at your beginnings
And never breathe a word about your loss:
If you can force your heart and nerve and sinew
To serve your turn long after they are gone,
And so hold on when there is nothing in you
Except the Will which says to them: "Hold on!"

If you can talk with crowds and keep your virtue,
Or walk with Kings—nor lose the common touch,
If neither foes nor loving friends can hurt you,
If all men count with you, but none too much:
If you can fill the unforgiving minute
With sixty seconds' worth of distance run,
Yours is the Earth and everything that's in it,
And—which is more—you'll be a Man, my son!

¹Dr. Williams refers, no doubt, to the so-called "condimental" preservatives as vinegar, salt, sugar, spices, etc., or strong deodorants, as sulphur dioxide, etc. Preservatives which are nearly or quite odorless and tasteless, as for example, sodium benzoate, are incapable of disguising or covering up the evidences of putridity.—EDITOR.

The President called on Dr. H. H. Rusby, of New York, to respond to the address of Doctor Williams, just concluded. Doctor Rusby began by saying that as a usual thing he was very much averse to participating in these introductory formalities, but on the present occasion he found that formality was lacking, and that feeling had taken its place, and he therefore found himself really happy in having the privilege of responding. He assured Doctor Williams that this Association was working along the very lines about which he was speaking. He spoke of a delightful visit he had just made to Denver's noted dahlia farm, as a proof of the wonders of which he had brought back with him for exhibition to his friends what he alleged was the smallest specimen of the flower he could find—a specimen sufficient to put to the blush of shame the dahlias of the East. In fact, he could grow enthusiastic about everything related to Colorado, except the duties of its Board of Health—because it seemed to him that the Board of Health would have absolutely nothing to do, unless it was to administer sedatives to visiting guests to keep them from becoming too enthusiastic. He was reminded, however, that times had not always been so “healthy” in this section of the great West. He remembered that when he visited this part of the country in the early '80's, Dodge City was not considered a particularly “healthy” place—especially after 12 o'clock at night. Cases had been known there where men in the very prime of life, and in apparently splendid health, had suddenly been taken off in a very unexpected manner.

In conclusion, Mr. Rusby said he not only desired to thank Dr. Williams, as the representative of the State Board of Health, most heartily in words for the message he had delivered, but he desired to give him the assurance that this Association had come to help in the matter of health. It had come largely for the purpose of helping this and other Boards of Health. He expressed the hope that the proceedings at this meeting might teach the Colorado State Board of Health and the boards of all the other states the very great truth—a truth which he thought was not sufficiently appreciated—that there could be no really efficient administration of public-health laws without the aid of pharmacy. He thought it one of the greatest mistakes that could be made to suppose that the physician alone could work out this problem of the public health. The physician could do his work well up to a certain point, and then the training, the education and the practice, of the pharmacist was required to supplement the work. He hoped that all those within the sound of his voice, all those who had anything to do with the study and knowledge of the proceedings of the Association at this meeting, would make it their business to show to the people of this country that if they were going to have any real success in protecting their wives and children against unhealthy and unclean things they must have a representative of pharmacy on the Boards of Health.

The President said there were present at the convention this afternoon the representatives of two sister organizations, which were closely allied to the welfare of this Association, and he would first call on Prof. W. C. Anderson, of Brooklyn, to address this body on behalf of the National Association of Retail Druggists.

Prof. Anderson began by saying that it was indeed a great pleasure for him to express the cordial greetings and best wishes of the National Association of Retail Druggists. It was with a feeling of intense appreciation and abundant satisfac-

tion that the younger national pharmaceutical association, the National Association of Retail Druggists, looked upon this, the American Pharmaceutical Association, the pioneer in pharmaceutical associations of this country, as a leader, whose sincere devotion and splendid activities had given to the country its great American pharmacy of today. It was well known to the members, he said, that the N. A. R. D. took care of and performed particular duties in reference to the welfare of the retail druggists of the land—duties which this organization, by reason of its many activities, and owing to its well defined policies and extensive work, could not well assume itself. The necessity for the N. A. R. D. was not because of any lack of interest in, or of activity on the part of, the American Pharmaceutical Association in carrying out the great work it had mapped out for itself, but was caused by changing conditions and circumstances, over which neither organization had any control. Circumstances had made it apparent that concerted and effective efforts must be used to stop and check the downward inclination of the financial or commercial side of pharmacy. But while the N. A. R. D. had devoted its greatest activities to the commercial welfare of the pharmacist, it must not be understood that it was not deeply interested in every effort for the raising of the standard of pharmacy, and for putting into effect the very highest ethical and professional operations and processes. "We believe," he said, "in fact contend, that every profession, no matter how high or how ethical it is, has surrounding it certain commercial conditions." In selecting a profession for their life's work, men and women were guided by certain things, such as family ties, position in society, likes and dislikes, service in the cause of humanity, and the like; but standing out prominently above all of these was the important factor of the ability to make a livelihood. The N. A. R. D., by taking up propositions which were of vital interest to the retail drug trade of the country, was by its efforts augmenting the work of the A. Ph. A., and every success of the N. A. R. D. meant just that much for business pharmacy. The N. A. R. D. and A. Ph. A. had much that was in common, and the former hailed with delight and satisfaction the work of the past year, which had brought the two organizations closer together, in thought, in sympathy and in action. The conference of the two Legislative Committees had demonstrated positively that the very best results could be attained in legislation, by these two committees working in harmony, by approving of that which was for, and disproving of that which was against, the interests of the pharmaceutical profession.

Prof. Anderson said he would not attempt to bring up at this time all the policies adopted by the National Association of Retail Druggists at its recent meeting, but because of certain unwarranted, misleading and absolutely untrue statements that appeared in the press in reference to the attitude of the retail drug trade upon the subject of anti-narcotic legislation, he felt it his duty to call the attention of this body to the fact that every word spoken, every sentiment and resolution adopted before the Milwaukee meeting of the N. A. R. D., was in favor of the proper restriction of that traffic, and in favor of proper anti-narcotic laws. Experience had shown the retail drug trade of the country that whenever legislation affecting the sale and distribution of drugs was attempted the best and most effective legislation was that legislation which the pharmacists obtained, and which was enacted through their efforts and influence. He believed that pharmacists

should appear in this great agitation in a more prominent way, and that they must take up the question of proper and effective anti-narcotic laws. Such laws had been proposed at Washington, some of them simply imposing a tax, but not having the proper effect in restricting the traffic. Others proposed simply to fill the pockets of certain individuals, at the expense of the pharmacist and the public. Still others had been proposed that put a restriction upon the retail drug trade, the wholesale druggist and the manufacturer, which could not possibly be complied with, and which, if enacted into law, would condemn every pharmacist, every wholesaler and every manufacturer, as a deliberate violator of the law—and he could not help himself.

In conclusion Prof. Anderson wished for this meeting the same degree of harmony and splendid results as that which characterized the Milwaukee meeting. He said it was their intention as workers in that organization to endeavor to show the pharmacists of the country that they should not only belong to the National Association of Retail Druggists, but that their interest should also be placed in the American Pharmaceutical Association. They wanted their members who had never attended the meetings of this Association to come to them, and see what the A. Ph. A. really was—to get in touch, shoulder to shoulder, with this pioneer organization, which had given the greatest energy and the greatest efforts to the uplift of pharmacy. He “wanted them to come to know the members of this Association, and be influenced by them, so that harmony would exist and that all would be working together to one common end.”

The President stated that the National Wholesale Druggists Association was represented before the convention at this time by W. A. Hover, of Denver, who would next address the Association.

Mr. Hover said it was a privilege and pleasure to bring the cordial greetings of the National Wholesale Druggists Association to this body. The American Pharmaceutical Association was now entering upon its sixtieth anniversary. The National Wholesale Association was now on the eve of holding its thirty-eighth annual meeting, which would take place the middle of October in the city of Milwaukee.

The American Pharmaceutical Association represented the oldest retail organization in this country. So far as he knew, the National Wholesale Association represented the oldest wholesale commercial organization in this country. The American Pharmaceutical Association had always stood for the highest professional and ethical conduct of the retail drug business; and the high character of that business today was the result of sixty years of work and effort on the part of the American Pharmaceutical Association. The National Wholesale Druggists Association had always stood for high commercial conduct and practice, not only in commercial lines, but in ethical and other lines as well. Much had been said about the dependence and interdependence of the retail druggist and the wholesaler. The members of this organization and the retail drug trade of the country were absolutely dependent upon the jobber, and it went without saying that the jobber was absolutely dependent upon them. At no time in the history of the drug trade of this country had that dependence been greater than today. Much has been said about the middle man, and economists had stated that the high cost of living was in a measure due to the middle man. This was not true, however, in

the drug business. Congress had presented data and figures which indicated that the average price during the decade just passed of staple drugs and chemicals was less than it was ten years ago; that, notwithstanding the fact that the average price of every other commodity had advanced from 5 to 10 or 15 or 20 or 25 or more per cent., that drug commodities were the only exception to the high cost of living today. As an illustration of why the retail druggist was so dependent upon the jobber, he would take one phase of the business; and that was the proprietary end of the drug business. Twenty-five years ago there was not to exceed in general use and consumption in this country more than five thousand articles of a proprietary character; and that included the French preparations. Today, that number had increased from less than 5,000 to over 28,000. The result had been that the demands on the retail druggist for specific items was much less than it used to be, but the number of items that he had calls for had been largely increased.

Continuing, Mr. Hover said it had been stated that the N. A. R. D. had many things in common with the A. Ph. A. The National Wholesale Association, he said, had everything in common with this organization. He knew of no line of activity in the business of the wholesaler which was not in common with the interests of this Association. In the past, this Association had given much consideration to the ethical and professional side of the drug business. Now, and in the future, it would have to give greater attention to the legislative and commercial features and especially to legislation—a task that was going to demand the best and most united efforts of both the wholesaler and retailer. There were many problems yet to be solved in the administration and conduct of the Food and Drugs Law. There were problems to be solved in connection with the sale of narcotics and habit-forming drugs. The proposed amendments to the Food and Drugs Act in regard to the sale of narcotics and habit-forming drugs were questions that required united cooperation. The retailer was as much interested in these as the wholesaler. The latter was as much interested in the practical solution of them as the retailer. The wholesalers were as anxious as the members of the A. Ph. A. and N. A. R. D. to bring about reforms in the distribution of narcotics and habit-forming drugs, and the wholesalers were anxious to cooperate with the other two bodies to bring about statutory enactments that were practical and possible of execution. He expressed the hope that the combined experience and talent of the three organizations might be concentrated, as all were working for the same end. the National Wholesale Druggists Association had no regard, whatsoever, for the commercial end of the narcotic drug traffic. It was their desire that it should be restricted along all legitimate lines, and that only that which was necessary for actual medical use and practice should be dispensed, and all other use eliminated. He therefore hoped that it would be the pleasure of this gathering, during the sessions of its legislative Section, to take the initiative and start the idea of a joint Legislative Committee, representing the American Pharmaceutical Association, the N. A. R. D. and the National Wholesale Association; and also the manufacturers—because it was only by virtue of the combined wisdom of all branches of the trade that there could be brought about a workable, practical law, prohibiting the sale of narcotics and habit-forming drugs. So far as the National Wholesale Druggists Association was concerned, he assured the members that it would give its hearty cooperation to the end to be desired.

The President said he was sure that the Association thoroughly appreciated the remarks of the two sister organizations.

President Godding announced that the time had now come for the presentation of his address as President, and called Third Vice-President E. Berger, of Florida, to the chair, while this was being done. (See September JOURNAL, p. 899.)

The President's Address was greeted with hearty manifestations of approval.

The Third Vice-President called for action upon the excellent Address of President Godding, and stated that the custom was to appoint a committee of five to consider and report upon the recommendations made, and he would entertain a motion to that effect.

On motion of H. M. Whelpley, of St. Louis, seconded by Joseph W. England, of Philadelphia, it was so ordered, and the chair appointed the following:

Otto F. Claus, of St. Louis, Chairman.
J. C. Wallace, of New Castle, Pa.
A. V. Pease, of Fairbury, Neb.
F. W. Meissner, of LaPorte, Ind.
C. A. Mayo, of New York City.

President Godding resumed the chair, and stated that the chairman of the Local Committee, Mr. Ford, had some announcements to make.

Mr. Ford stated that one of the privileges of the Local Secretary was to be prominent and make a number of speeches during the meeting, and that though this was his first appearance, it was not to be the last. He then proceeded to make announcement of the excursion to the Foot Hills on Tuesday morning, intended especially for the ladies; announced a concert to be held in Trinity M. E. Church, on Broadway, Tuesday night, at which some of the best talent in the city would assist, and invited all to be present. He also stated that a photographer would be present at the Broadway entrance to the Brown Palace Hotel in the morning at 10 o'clock, to take a group picture of the Association.

The President stated that the next order of business would be the reading of the minutes of the Council.

On motion of Charles Holzhauer, of Newark, N. J., seconded by S. L. Bresler, of Denver, the reading of the minutes of the Council for the past year, as already published in the Journal of the Association, was dispensed with, and only the minutes of a session of the Council held at Denver on this date were ordered to be read.

Likewise, on motion of Mr. Holzhauer, seconded by Mr. Whelpley, the minutes of the Council for the year, as published in the Journal, were approved by the Association.

Joseph W. England, Secretary of the Council, thereupon proceeded to present a synopsis of the minutes of the third session of the Council of the American Pharmaceutical Association for the year 1911-2, held Monday morning, August 19, 1912, beginning at 9 o'clock. (See Proceedings of the Council.)

Dr. Rusby, of New York, called attention to what he said was rather an important omission in the minutes, viz., that it had been resolved in the Council to have announcement made before the Association in general session that the Council would be very glad to receive any copies of Proceedings which members might have and for which they had no use.

The President called for action on the minutes, and W. C. Anderson, of Brooklyn, moved to adopt the minutes as read.

Dr. John M. Francis, of Detroit, asked whether the adoption of the minutes as read would commit the Association to the plan of the establishment of a House of Delegates, as set forth in the resolutions read by Secretary England, or whether this matter would receive full discussion at some future time.

Prof. J. H. Beal, General Secretary, stated that, in his opinion, the adoption of the minutes would carry with it the approval of the resolutions for the creation of a House of Delegates. If the resolutions as read were approved, it would mean that a House of Delegates would be created, and continued until the resolutions were rescinded. The proposition had been very carefully considered by the committee which prepared the resolutions, and the matter had again been very carefully considered by the Council at its session this morning. He thought a close reading of the resolutions would show that for the present, at least, the proposed House of Delegates was the creature of the Council and the Association, and had no power to initiate anything except the matters contained in the articles creating it. If the hour were not so late he could present many arguments which would tend to show that it would be a wise step to take—experimentally, at least; and that the matter was so surrounded with safeguards that it would not be possible for the proposed House of Delegates to usurp any powers not expressly given to it.

This statement from the General Secretary was followed by a discussion of some length, participated in by Messrs. C. A. Mayo, of New York; H. M. Whelpley, of St. Louis; Frederick T. Gordon, of Philadelphia; Charles Holzhauser, of Newark, N. J.; W. B. Philip, of Fruitvale, Cal.; F. W. Meissner, of LaPorte, Ind.; H. H. Rusby, of New York, and W. C. Anderson, of Brooklyn, the net result of which was that the motion of Mr. Anderson to adopt the minutes as read was, by his consent, and at the suggestion of C. A. Mayo and Frederick T. Gordon, as supplemented by Thomas F. Main, modified to take this form: "That the minutes of the Council be approved as read, except that part relating to the establishment of a House of Delegates, and that the latter be made a special order for the consideration of the Association in called general session on Wednesday morning." The motion in this form was put to a vote and carried.

A motion by W. B. Philip, seconded by G. H. R. Lichthardt, of Sacramento, Cal., that the resolutions in question be printed, so that the members might have an opportunity of reading and considering them before they came up for discussion, was adopted.

The President announced that the final order of business for this session was the formation of a Nominating Committee, by the selection of two delegates from each state, territory, island possession and foreign country entitled to representation on said committee.

Thereupon, the General Secretary called the roll of the states, territories and countries, for the information of the members present, and moved a recess of ten minutes to enable the members to make their selections for the Nominating Committee. This motion was seconded by Mr. Bresler, of Denver, and carried.

Upon resumption, the names of their representatives were handed in from the various states and territories, and the Nominating Committee was made up as follows:

NOMINATING COMMITTEE.

Alabama	L. C. Lewis.
Arkansas	W. L. Dewoody.
California	Miss Clarissa M. Roehr, W. B. Phillip.
Colorado	A. W. Clark, S. L. Bresler.
Connecticut	T. F. Main.
District of Columbia.....	W. S. Richardson.
Florida	Ernest Berger.
Illinois	I. A. Becker, C. W. Patterson.
Indiana	A. F. Sala, M. P. Schwartz.
Iowa	P. A. Schlumberger, I. A. Anderson.
Kansas	Martin Noll, L. E. Sayre.
Kentucky	J. W. Gayle.
Louisiana	F. C. Godbold, Philip Asher.
Maryland	H. L. Meredith, Charles Caspari, Jr.
Massachusetts	E. H. La Pierre, Miss Jennie H. Summer.
Michigan	John Helfman, L. A. Seltzer.
Mississippi	G. C. Kendall, H. M. Faser.
Missouri	Solomon Boehm, O. F. Claus.
Montana	C. E. Mollet.
Nebraska	C. R. Sherman, R. A. Lyman.
New Jersey	H. H. Rusby, G. M. Andrews.
New York	C. A. Mayo, W. C. Anderson.
Pennsylvania	J. C. Wallace, P. H. Utech.
South Dakota	F. W. Brown, D. F. Jones.
Texas	R. H. Needham, E. G. Eberle.
Vermont	M. G. Beebe.
Virginia	T. A. Miller.
Washington	A. F. Maxwell, G. H. Watt.
West Virginia	F. B. Haymaker, Alfred Walker.
Cuba	J. P. Duncan, Francisco Remirez.

At large (appointed by the chair): J. P. Remington, of Pennsylvania; H. M. Whelpley, of Missouri; J. A. Koch, of Pennsylvania; J. H. Beal, of Ohio, and W. B. Day, of Illinois.

The Chair then announced that the Nominating Committee would meet immediately after the close of this session for organization, and that the next session of the Association, to be held Tuesday morning at 10 o'clock, would be in the ballroom, on the eighth floor of the Brown Palace Hotel. There being no further business before the Association, on motion of Prof. W. C. Anderson, seconded by Dr. Otto Claus, an adjournment was taken to the time and place mentioned.

SECOND GENERAL SESSION—*Tuesday Morning, August 20, 1912.*

Owing to a long session of the Council, the Association in second general session was not called to order by President Godding until 10:45 a. m. in the ball room of the Brown Palace Hotel.

The Minutes of the first session were read by the General Secretary. On motion of Charles J. Clayton, of Denver, duly seconded, the minutes were approved as read.

The President called for the reading of the minutes of the Council, and Secretary England, of that body, read the minutes of the fourth session, of the Council for the year 1911-12, held this date (August 20th), beginning at 9 o'clock a. m. (See Proceedings of the Council.)

On motion of J. C. Wallace, of Pennsylvania, seconded by Mr. Anderson, of Brooklyn, the minutes were ordered adopted as read.

The report of the Nominating Committee being called for as next in order, said report was read by the General Secretary. (See September Journal p. 929.)

The chair called for action on the report and on motion of Mr. Clayton, seconded by Mr. Day, the report of the Nominating Committee was adopted as read.

The report of the Treasurer was called for, and Treasurer Whelpley, in presenting his report, explained that the change in the fiscal year of the Association from July to July to the calendar year running from the first of January caused his report at this time to cover only the period of six months from July 1, 1911, to January 1, 1912. He thought it would be interesting, however, to give a few totals showing the condition of the finances as they appeared on August 19, 1912, and also presented an account of some of his experiences in collecting dues from members in arrears. (See September Journal p. 915.)

On motion of Theodore J. Bradley, of Albany, N. Y., seconded by Albert Schneider, of San Francisco, the report of the Treasurer was received, and ordered to take the usual course.

The chair stated that the Secretary had a number of telegrams and communications which he would now read.

The Secretary read telegrams of greetings and best wishes for the success of this meeting from the California Pharmaceutical Association, the Women's Pharmaceutical Association of the Pacific Coast, the Retail Druggists' Association of San Francisco, and a like telegram from Otto Raubenheimer, of Brooklyn, in which he expressed his regret at his inability to attend this meeting. The Secretary also read the following greeting from the Women's Organization of the National Association of Retail Druggists.

The Woman's Organization of the National Association of Retail Druggists extends most sincere greetings and best wishes to the American Pharmaceutical Association upon this its sixtieth anniversary gathering.

We congratulate you upon its achievements in the past and know that the future years will bring added honors to your Association and greater blessing to the world at large.

Sixty years of work well done for the best good of your brother pharmacists is a record the American Pharmaceutical Association may be justly proud of.

Our sincere thanks are extended to you for the splendid support of and impetus given to the important movement for Sunday rest and shorter working hours and all other work for the betterment of humanity.

It is our hope that we may cooperate with you wherever possible and we both may see

"What a great big beautiful chance each has
In the life of the world to play some part;
To answer its needs with willing hands
And add to its cheer with a glad some heart.
This chance is yours, and ours, too,
If only we do well the tasks that we have to do."

Faternally yours,

NELLIE FLORENCE LEE, Secretary.
EDITH A. STORER, President.

A letter from John S. Bond, of Little Rock, Ark., was also read expressing regret at his inability to attend the meeting. The Secretary also read a communication from the Chamber of Commerce of Colorado Springs, extending a cordial invitation to the members to visit that city before returning to their homes.

The chair called for action upon the various communications as read, and on motion of Mr. Day, of Chicago, seconded by Mr. Meissner, of La Porte, Indiana, the same were ordered received, and the Secretary authorized to make appropriate responses by mail.

The report of the General Secretary was called for as the next order of business, and Secretary Beal, in presenting his report, explained that he had taken the liberty of combining his report as General Secretary with his report as Editor of the Journal for the past eleven months, and unless there was objection he would present the report in abstract. Owing to the change in the financial year, whereby it now ran with the calendar year, instead of from July to July, his report was in two sections. The first portion of his financial report covered the period of time elapsing between his assumption of office on the first day of September, 1911, to December 31st of that year, and that portion of his report, together with the books, had been placed in the hands of the Auditing Committee, whose report was now in the hands of the Treasurer for later presentation to the Association. The report for the first half of the fiscal year, from January 1st to June 30, 1912, had not been referred to the Auditing Committee, but would go to that committee at the close of the present year. He then proceeded to present his report in abstract. (See September Journal p. 908.)

W. S. Richardson, of Washington City, moved that the report be received, to take the usual course.

Mr. Gordon asked for information whether the acceptance of the report involved the adoption of the recommendations therein made. Secretary Beal stated that he thought the proper method would be to simply receive the report and place it on file. The recommendations, he thought, should go to the Council for action, this being a joint report to Council and Association.

Mr. Richardson's motion was thereupon seconded by Mr. Gordon and carried.

John Culley, of Ogden, Utah, moved that the Secretary be reimbursed for the personal expenses incurred by him in superintending the publication of the Journal in a city distant from his home town, as shown by his report, and this motion was seconded by Mr. Mayo, of New York, who paid tribute to the valuable services of the Secretary in connection with the local branch in New York City and such branches elsewhere, and to the effective aid he had given on the occasion of a joint meeting of the local pharmacists with the physicians in New York.

The Secretary explained that, while he was grateful for the proposition, all expenditures must be authorized by the Council, after approval by the Committee on Finance. He suggested, therefore, that the motion be withdrawn, and the matter allowed to work itself out in the Council. This suggestion was acceptable to both Mr. Culley and Mr. Mayo, and it was so ordered.

Mr. Mayo here stated that he had called on the widow of the late C. S. N. Hallberg as he came to this meeting through Chicago, and she had requested him to express to the members of the Association her profound appreciation of the material aid extended her through the medium of the Hallberg Fund. He said the house, which had been saved to the estate by the contribution of the Association, had been improved and was in excellent condition, and besides furnishing her a comfortable home, yielded an income from that part she was able to lease to others sufficient to support herself and young son with economy.

The Secretary read the report of the Auditing Committee. (See September Journal p. 926.)

On motion of Mr. Meissner, seconded by Mr. Richardson, the report just read was ordered received.

The Secretary presented the report of the Committee on Organization of Local Branches.

REPORT OF COMMITTEE ON ORGANIZATION OF LOCAL BRANCHES.

When the chairman of this important committee accepted the responsibilities of this work, he fully believed that conditions were ripe for the formation of a branch of the American Pharmaceutical Association at Cincinnati. With this end in view, a meeting of the druggists of Cincinnati and vicinity was called at the College of Pharmacy in the month of March of this year. Our honored Secretary, Professor Beal, and others, addressed the meeting and it was believed that the necessary enthusiasm was aroused to initiate this Branch. Your Chairman, however, failed in getting the required number of signatures for the formation of this Branch. Failing in this, your chairman called upon the balance of the members of your committee, who could offer him nothing more tangible than sympathy. So we regret exceedingly that we are compelled to report that no Branch of the A. Ph. A. was formed at Cincinnati this year, but it is hoped with the interest created we will have no difficulty in starting one this coming winter in Cincinnati and possibly one in Columbus.

Respectfully submitted,

JOSEPH LENGFELD,
GEO. B. KAUFFMAN,
OTTO CLAUS,
CHAS. W. JOHNSON,
THEO. D. WETTERSTROEM, Chairman.

On motion of the Secretary, seconded by Mr. Meissner, this report was ordered received and placed on file.

The chair called for report of the Committee on Editing Rules, and the same was read by Mr. Mayo, in the absence of Chairman Hays.

REPORT OF THE COMMITTEE ON EDITING RULES.

Great pressure of other matters, and his own inability to apply himself as closely to either his vocational or avocational duties as he would like, have prevented the chairman of your committee from carrying out his plan of enlisting the cooperation of his associates in the preparation of a set of editing rules, and submitting them to the Association for consideration. As a preliminary step to this plan, we have secured from a number of other organizations whose objects are at least partly similar to ours, some of the rules which they have adopted for the guidance of their editorial forces. Instead of proceeding with this work until all available sources of aid had been tapped, studying carefully the data obtained, and compiling a set of rules that might prove of assistance to our various editorial workers in their efforts to follow a uniform style, your chairman was forced by the circumstances stated to abandon his plan after he had secured a few of the rules adopted by cognate societies for the guidance of those in charge of their publications. Such data as have been collected we submit herewith, fully realizing that in their present form they are useful only as a nucleus for our successors in case the Association sees fit to appoint them, and the latter see fit to continue the work along the lines we have mapped out. The material attached, and forming a part of this report, consists of:

- A. (1) A typewritten sheet received from the American Medical Association Press, bearing date of May 7, 1912.
- (2) A pamphlet entitled, "The Bibliographic Style of the American Medical Association Press."
- (3) A smaller pamphlet from the same source entitled, "Suggestions to Authors."
- B. (1) A letter from the Publicity Director of the National Association of Retail Druggists, and,
- (2) A sample of the style followed in printing the literature of that association.
- C. A pamphlet entitled "Directions for Assistant Editors and Abstractors," issued by the American Chemical Society.
- D. A letter from the assistant editor of the *American Chemical Journal*, written in reply to one from your chairman on the subject of your committee's work.
- E. A clipping from the *Pharmaceutical Journal and Pharmacist*, the organ of the Pharmaceutical Society of Great Britain, sent by the editor of that publication in response to a request for his "editing rules."

We also call attention to the "Manual of Style," issued by the United States government printing office. This is a very handy little book, which may be obtained from the government printer for 15 cents.

We mention in this connection a paper read before this body by Dr. Lyman F. Kebler at the 1905 meeting, and published in our Proceedings for that year, page 370, entitled: "The Desirability of Using Uniform and Distinct Abbreviations for Periodicals, with a Suggested List." We also point out the fact that in his presidential address, H. H. Rusby recom-

mended "that the secretary be instructed, so far as he possesses the necessary information, to append to the names of members in our official directory, their proper academic and professional titles." This recommendation (which gave rise to the creation of a committee on editing rules) was adopted, and the additions called for will doubtless be made.

Our secretary and editor has expressed to the chairman of this committee a preference for the shorter spelling of the word "gramme." While we advocate the using of the simpler American spelling in preference to the foreign for words which may be correctly spelled either way, we make an exception of the word "gramme," for the very practical reason that if spelled the short way it is often mistaken for "grain" by printers, proof readers and others, with results that not only are very annoying, but may result in discredit to the profession which it is the prime aim of our Association to improve.

Just here, while touching on a metric subject, we recommend that in the National Formulary formulas no attempt be made at stating the equivalent for the metric quantities, for, on the one hand, if this be done with any degree of accuracy, the equivalents will be expressed in quantities that will not only appear cumbersome in print, but will be inconvenient to weigh or measure in practice; and, on the other hand, if accuracy be sacrificed for the sake of appearance and convenience, a sample of a preparation containing the quantities directed in the metric column may vary materially in strength or quality from a sample containing the quantities directed in the old-style column.

In conclusion, after apologizing for the small amount of work we have done, and the large quantity of words we have taken with which to tell it, we beg leave to append a clipping from the New York Times, published in April, which follows:

"Censures the Proofreader—Columbia Alumni News Takes a Fall Out of the University Quarterly. A plea for uniform spelling and a protest against "Simple Simon Spelling" is made editorially in the current number of The Columbia Alumni News. It seems that the new degree of Bachelor of Science in Practical Arts, recently decided on by the university, is alluded to in such capital letters on Page 189 of The University Quarterly, and without capitals as 'bachelor of science in practical arts' on Page 191 of the same paper. From this slight offending The Alumni News takes its cue—

"So we have another new degree, Bachelor of Science in Practical Arts (Page 189 of The University Quarterly) or bachelor of science in practical arts (Page 191)," it says. "You pays your money and takes your choice." For this special degree our choice would be the second form.

"Not in a spirit of carping criticism, but for information, can any one (not anyone) inform us in regard to the basis of spelling, capitalization, and hyphenization now in vogue? In the last number of The Quarterly we find the ultra-English 'traveller' (but 'traveling' and 'leveled'), 'grey-spined,' 'grey,' 'practice,' as a verb, side by side with the ultra-American 'center,' 'fiber,' 'theater,' 'program,' the last stage of a good word that used to be properly pronounced, but has now, as a consequence of the new spelling, come to be 'prugram.'

"Then we find 'glee-clubs,' 'track-teams,' 'college-man,' but 'anyone,' 'everyone,' the latest fad out of the Pandora's box of Simple Simon spelling.

"But why Maeterlinck's 'Blue bird'? Why not 'blue bird,' or 'blue Bird'? And we meet an old friend in a totally new dress or undress, 'Beside the bonnie brier bush.' Do you recognize it?

"We have an English language, a pretty fine old language, with forms fixed and consecrated by the usage of generations of men who knew it. Why not stick to it?"

Respectfully submitted,

FRANCIS HAYS, Chairman.

Mr. Mayo, seconded by Mr. Day, moved that the report be received and the committee continued.

Speaking to his motion, Mr. Mayo stated that the work of the committee was important, and had only just begun, and might have a far-reaching influence on the form which pharmaceutical literature was destined to take. There was need for some authentic and satisfactory system in this behalf. The rules adopted by the American Medical Association did not apply in many cases, and besides were open to criticism on several points. He said that his motion to continue the committee did not necessarily imply that Mr. Hays should continue chairman of it, if he should desire to be relieved—that the *personnel* of the committee might be different, though the committee itself were continued.

The motion to receive the report and continue the committee was thereupon adopted.

The Secretary presented by title the report of the Committee on Progress of

Revision of the U. S. P., and suggested that it would be proper to refer this report to the joint meeting of the Committee on U. S. P., with the Committee on National Formulary, which would probably be arranged for 10 o'clock Wednesday morning.

Mr. Anderson so moved, and the motion prevailed.

The report of the Committee on National Legislation was presented by Chairman Richardson. (See September Journal p. 1024.)

Mr. England then proceeded to pay tribute to the splendid services of Chairman Richardson, of the Committee on National Legislation, before the last session of Congress. He said he had been most faithful, loyal and hardworking in his efforts, and well deserved the praise of the Association for what he had done. He therefore moved that the report be received to take the usual course and that a special vote of thanks be tendered to Mr. Richardson, in recognition of his valuable services.

This motion was seconded by Mr. Meissner, of Indiana, and Mr. Philip, of California.

Mr. Philip, speaking to his second, said he wished that every member present might read the report of Hon. H. J. Finger, the representative from California before the Hague Opium Conference. He thought it would probably open the eyes of the members to the enormous extent of the opium traffic, and would cause them to realize how hard it was to make an opium law that would suit all people. They would also realize that some law was going to be enforced, which would make a great deal of work for the pharmacists in registering small sales; but he thought the druggists of the country, once fully advised as to the enormity of the abuse of the use of opium, would be willing to do this in the cause of humanity.

Prof. W. C. Anderson said that as the Section on Education and Legislation was to consider legislative matters, and no doubt would bring in recommendations to this Association for adoption in reference to legislation, he thought this report ought to be in the hands of this Section for information, and offered an amendment to Mr. England's motion that the report be referred to the Section on Education and Legislation. This left the motion as completed in this form: "To receive the report, with a special vote of thanks to Chairman Richardson for his valuable services, and that the report then be referred to the Section on Education and Legislation."

Mr. England said he would accept this suggestion, and Mr. Meissner also seconded it, and the motion in this form was put to a rising vote and carried.

Prof. Bradley called attention to the fact that the time had not been set for passing on the matter of a House of Delegates, and moved that the hour of 11:30 on Wednesday morning be set for consideration of this subject.

Mr. Mayo moved to make the hour 9:30, instead.

This motion precipitated quite a discussion among the members as to the proper mode of procedure, Mr. Meissner was in favor of considering this question of the establishment of a House of Delegates without further delay. This idea was opposed by Messrs. Schlumberger, Anderson and Philip, on the ground that it would not be fair to a number of members not now present, who were given to understand by the action taken at yesterday's session that this matter would come up as a special order on Wednesday morning—members who would like to be

present and discuss the proposition, but who would be prevented from doing so if the matter were taken up and disposed of at this session.

Mr. Beal suggested that if the matter were deferred much longer, the proposed House of Delegates, if established, would have little opportunity to do anything during the present year, and the delegates who had come to this convention from all over the country, some fifty or sixty of them, would go away, as they had done heretofore, without any proper recognition of their existence or their attendance being taken. Mr. England agreed with Mr. Beal, and suggested that a meeting of the Council Wednesday morning would preclude the attendance of the members of that body at the early hour of 9:30, the time fixed for the meeting of the Association in called session to consider this subject as a special order. Prof. Bradley thereupon withdrew his motion, in favor of the proposition for immediate action.

After some further discussion, participated in by Messrs. Gordon, Meissner, Anderson, Clayton and Mayo, a motion made by Mr. Anderson and seconded by Mr. Sherman, that when the Association adjourned it should adjourn to meet at 9:30 o'clock Wednesday morning, and that this question of the establishment of a House of Delegates should be made a special order of business for that hour, was put to a vote and carried.

The report of the Committee on Transportation was called for, and Mr. Mayo, Chairman, stated that the committee had published this report in the Journal of the Association, and it had been given quite wide publicity, and they had nothing further to report, except to note the fact that a slight deviation had been made in the method ordinarily pursued, in that the committee first published a tentative report, suggesting two general routes to the meeting-place, with the view of awakening more interest on the part of the members. The chairman had also endeavored to arouse some interest throughout the country in the meeting by sending out copies of this report to the various State Associations, where they had been read at their annual meetings and incorporated in their proceedings. He ventured to hope that some of the widespread attendance at this meeting was due in part, at least, to the interest aroused by the report of the committee.

The Secretary read the report of the International Committee on Pharmaceutical Nomenclature as follows:

REPORT OF THE COMMITTEE ON AN INTERNATIONAL COMMITTEE ON PHARMACEUTICAL
NOMENCLATURE.

Your committee beg leave to report that since the appointment of the committee the chairman has been in correspondence with national pharmaceutical societies in foreign countries.

While no definite results have so far been obtained, your committee believe that a further agitation of the movement will have a good effect in preventing or at least checking somewhat the future dangerous duplication of names for drugs and medicinal products.

Your committee recommends that the committee be continued.

Respectfully submitted,

CASWELL A. MAYO, Chairman.

On motion of Mr. Schlumberger, duly seconded, the report was received and the committee continued.

The chair called for report of the Committee on Procter Memorial Fund.

Prof. Charles Caspari, Jr., stated that he had seen the chairman of the Procter Memorial Fund a few days before leaving the city of Baltimore, and he had understood from him that he would send in a brief report. Mr. Caspari

said he did not think a great deal of work had been done. He learned that much from Mr. Hancock, chairman of the committee, who seemed to feel rather depressed over the outlook; that the centennial year of Prof. Procter's birth was approaching now, and Mr. Hancock had hoped by that time to have sufficient funds to carry out the purpose of erecting and dedicating a monument to Procter in Washington City, but it looked now as though he would be disappointed in this hope.

REPORT OF THE COMMITTEE ON PROCTER MEMORIAL.

Eight years ago, a preamble and resolutions were adopted by the American Pharmaceutical Association recognizing the unusual worth to pharmacy of one, who by unanimous consent was denominated the Father of American Pharmacy—the late Professor William Procter, Jr.¹

The resolutions which provided for the appointment of a committee to collect the necessary funds for the erection of a monument to his memory, in the Smithsonian grounds in the city of Washington, D. C., received the hearty approval of the members present.

The committee was duly organized and shaped for work, which was soon begun. Literature was circulated and the pharmaceutical journals volunteered the service of their pages. It was hoped that the required sum—twenty thousand dollars—would be soon received by subscriptions from the more than forty thousand pharmacists and druggists in America, and that a monument worthy of the object, and highly creditable to American Pharmacy, would soon be materialized in the designated grounds—at the Capital of the United States, where tourists from abroad and those from the states would recognize that pharmacy holds a place among the learned professions with a clean record on its commercial side.

So far the required amount has not been received. It may be the fault of the committee, as reappointed from year to year, yet the committee cannot be held wholly responsible in the fact that the object, plan and purpose has been published and should appeal to every pharmacist and druggist who feels a personal interest and pride in a vocation so vitally associated with the health and lives of the people.

In a few states, liberal subscriptions have been given, but in many states, nothing has been subscribed.

The chairman of your committee has corresponded with the presidents and secretaries of the State pharmaceutical associations this year, urging them to have similar committees appointed at their annual meetings, to cooperate with ours, in the hope of better results and a more satisfactory report at the next annual meeting of the American Pharmaceutical Association.

The wish has been for individual identity of as many pharmacists and druggists as it may be possible to interest and those who wish to subscribe may do so by remittance to the chairman, or any other member of the committee, which remittances will be duly acknowledged and the name, address, and amount subscribed will be published in the Journal of the American Pharmaceutical Association.

Enough money has been subscribed and paid into the treasury of the Association to assure success, but what is needed is to secure the balance in time to have the monument ready for dedication in 1917—the centennial year of the birth of Procter.

The committee can only report progress. Some subscriptions have not been paid—the exact amount cannot now be stated.

The Treasurer will inform you in his report that the National Retail Druggists Association at its last annual meeting voted a subscription of one hundred dollars (\$100) to the fund. The Treasurer will state in his report the moneys he has received for the fund.

Respectfully submitted,

J. F. HANCOCK,

Chairman Committee William Procter, Jr., Memorial Fund.

August, 1912.

On motion the report was received and referred to the Committee on Publication.

The report of the Committee on National Formulary was called for, and Secretary Beal stated that the report of Chairman Diehl was in the hands of Mr. Cook, of Philadelphia. He moved that it be referred to the special joint meeting of the Committees on U. S. Pharmacopoeia and National Formulary, which had already been provided for.

This motion was seconded by Mr. Meissner and carried.

¹See Proceedings, Vol. 50, pp. 213-217.

W. B. Day, chairman, then presented the report of the General Committee on Membership. (See September Journal, p. 926.)

On motion of Mr. Mayo, seconded by Mr. Helfman, the report just read was accepted and referred for publication.

Mr. Osseward, of Seattle, here took occasion to state the marked impression made upon his mind upon a recent visit to the Sixth Annual Meeting of the Canadian Pharmaceutical Association, at Vancouver, as to the matter of membership in that body as compared with the American Pharmaceutical Association. He had made inquiry, and found that the number of pharmacists in the Dominion of Canada was some twenty-five or twenty-six hundred. He then asked the question as to how many members the Canadian Association had, and was very much surprised to learn that the Association had twenty-five or twenty-six hundred members. There, the pharmacists belonging to the various Provincial Associations became members of the Canadian Pharmaceutical Association, and the dues and expenses connected with the membership came from each Province. The Canadian Pharmaceutical Association today was as strong in membership as the American Pharmaceutical Association, though it had been in existence only six years, as against the sixty years of this Association.

Prof. W. C. Anderson said that while this was no doubt true, the conditions with the Canadian organization were very different from those of the American Pharmaceutical Association. Here, there was direct membership; there, they had membership through affiliation with their local associations. If the American Pharmaceutical Association had all the local associations affiliated with it, and the payment of dues in the local associations constituted membership in the A. Ph. A., there would be an entirely different showing. He did not think the comparison should be used to reflect upon the American Pharmaceutical Association — although all admitted it was not supported by the pharmacists of the country as it ought to be. He thought perhaps the sending out of this notice to the pharmacists of the United States might awaken their interest and cause them to back up their national organization, the A. Ph. A., even if it did necessitate the payment of direct dues to the national body.

Mr. Osseward disclaimed any purpose to reflect on the American Pharmaceutical Association, and said the only reason he referred to the advantages enjoyed by the Canadian Association in respect to its comprehensive membership was, that a question had come up there in regard to a large and very powerful chemical company in Canada distributing a line of non-secret remedies, and there were some warm discussions regarding the matter. This company had been distributing its goods not only to the druggists of the country, but to general merchandise and department stores. He had stated before the session considering this matter that the Canadian pharmacists had a power in their hands which he wished the American Pharmaceutical Association had — that through their comprehensive membership, he believed they could bring this firm to time, because they were united. He said there was no question but that the Canadian Association had far more power than this Association would have on a similar proposition.

The Secretary made the report of the Board of Canvassers appointed to

canvass the vote for officers for 1912-1913. (See December, 1911, *Bulletin*, p. 707.)

On motion of Mr. Clayton, duly seconded, the report just read was adopted.

President Godding announced that the business of the Association at this session had been completed, and a motion to adjourn was in order.

Mr. Meissner suggested that all the new members for the first time present, — and he recalled one man who had been a member for sixteen years, and was now attending his first meeting of the Association, — should be invited to come forward to the rostrum and be introduced to the balance of the members, so that all might become better acquainted.

The President stated that without going through the formality of a vote, all those present who were now attending the meeting of the Association for the first time were cordially invited to come forward and meet the membership.

Quite a number responded to this invitation, and the members of the Association came forward and shook the hands of the new members cordially, introducing themselves and bidding the new members welcome. After this formal reception was concluded, on motion of Mr. Meissner the Association adjourned to 9:30 o'clock Wednesday morning, to consider the special order set for that hour.

THIRD (CALLED) GENERAL SESSION—*Wednesday Morning, August 21, 1912.*

Although 9:30 was the hour set for the Association to meet in called general session, to consider the proposition to establish a House of Delegates, owing to a protracted session of the Council the Association was not called to order by President Godding until 10 o'clock.

On motion of Mr. Mayo, seconded by Mr. Freericks, the reading of the minutes was dispensed with.

The chair announced that the special order of business was the consideration of the resolutions, proposing to create a House of Delegates of the American Pharmaceutical Association, and defining its functions and duties. He asked the Secretary to read the resolutions as presented.

Secretary Beal prefaced his reading by stating that this paper had been originally gotten up in the form of a proposal to amend the By-Laws, but was changed to a series of resolutions, which would have the effect of standing rules, so long as they were in existence, and could be repealed at any time. He then proceeded to the reading of the resolutions. (See September Journal, p. 928.)

The chair called for action upon the resolutions as presented by the Secretary. Prof. W. C. Anderson, of Brooklyn, moved the adoption of the resolutions as read, and this motion was seconded by Messrs. Philip and Wallace.

Mr. Main, of New York, made the criticism that, as many of the delegates coming from organizations and institutions all over the United States to the meetings of this Association would not be members of this body, so far as the resolutions disclosed, it might be unwise to turn over to them any proposed resolutions for this body to act on.

Mr. Mayo thought that there could be no doubt but that the presenter of these resolutions had in mind some definite advantage to accrue from their adoption, and he asked that Secretary Beal be called upon to state exactly what

he hoped to accomplish by the formation of such a House of Delegates. He felt sure this would clear the situation.

Mr. Schlumberger, of Iowa, endorsed the suggestion of Mr. Mayo, and proceeded to express his approval of the objects sought to be attained by the resolutions, as it seemed to him folly for the various state and national organizations to send delegates to the meetings of the American Pharmaceutical Association, only to find that they had no recognition beyond a mere formal one, and no standing with the Association in its deliberations, or duties to perform during the week of the meeting.

Mr. Beal, acting upon the suggestion that he explain the objects sought to be attained in the resolutions presented, and the functions outlined for the proposed House of Delegates, proceeded to do this at some length.

He said that the resolutions were prepared to meet a situation which had long been a puzzling and embarrassing one to the Association. These resolutions had been prepared jointly by Dr. Whelpley and himself, and the former was just as "guilty" in the matter as he was, and he expected him to share the blame. The resolutions were not prepared in the quiet of one's study, where they might have been given that amount of consideration they really should have had, but amid the bustle and noise of a railroad train coming up over the plains of Kansas to the city of Denver. It would be observed that, for that reason, the committee provided that the body itself should be called upon to make a report as to its further functions and its methods of work, and also its form of organization, as they believed they could not, in the short space of time allowed, fully cover all the possible contingencies that such a House of Delegates might be called upon to face. He believed ample provision had been made whereby the House of Delegates could be prevented at any time, if it chose ever to usurp the functions now properly belonging to the General Session of the Association, or to the Council of the Association, from exceeding its authority.

Continuing, Mr. Beal said that the gist of the whole matter was contained in Section 7, of the resolutions, which determined the functions of the proposed House of Delegates, everything else contained in the resolutions being merely a matter of machinery, and having nothing to do with the scope or power of the proposed body. He then re-read section 7, as follows:

"7. Until otherwise determined, the House of Delegates shall exercise the following functions:

"(a) To receive and consider the reports of delegates from the bodies which they represent in the House of Delegates.

"(b) To consider and report upon such resolutions, amendments to the By-Laws, and upon such other subjects as shall be referred to the House of Delegates by the Council or by the Association in general session.

"(c) To act as a general committee on resolutions, and to report to the Council not later than its last session a series of resolutions upon topics concerning the general welfare of the Association, or concerning any features of the Association's work."

These, Mr. Beal said, comprised the entire functions of the proposed House of Delegates as conferred by this series of resolutions—to consider and report resolutions to the Council. These would not be valid unless approved by the Council; and even then they would not be valid, nor would they become binding upon the Association, until they had been reported to and been approved by the

Association in general session assembled. It was to be, as had been very cleverly expressed by Chairman Wallace, of the Section on Education and Legislation, a "Clearing-house." It was intended to receive communications which could not be received by the general session, because of the multiplicity of affairs with which the Association had to deal; to sift them, to extract the kernel of wheat from the bushel of chaff, and to whip these propositions into shape, and then bring them back to the Association through the regular channel, — which would be the Council, — which would then approve or disapprove, and report its action to the general session for confirmation or rejection. It did not take away from the general session, nor from the Council a single function which they now possessed. There was nothing that required that a resolution introduced on the floor of the general session should be referred to this House of Delegates, and the Association might act upon such a resolution at once, adopting it or rejecting it. But if such a resolution did come in a class which could not be properly dealt with in the limits of the general session, then it could, by vote, be referred to this House of Delegates.

Mr. Beal said there were in attendance at this meeting of the American Pharmaceutical Association delegates from some fifty or sixty state and local societies and institutions. After their credentials had been received and approved, so far as the functions of these delegates were concerned, they ended right there. If they happened to be members of this Association, they could take part in the proceedings, and speak upon any topic upon which the chair recognized them — but not as delegates. If they came simply as delegates, and were not members of the Association, they could only have the privileges of the floor, or appear before any of the committees of the Association, by direct vote authorizing the same. In short, a delegate to the American Pharmaceutical Association was just a delegate, and that was all. He was one of the "vestiges of creation and evolution." Originally, the American Pharmaceutical Association was altogether a delegate body, and these delegates transacted all the business, including the nomination and election of officers. In making the change from a delegate body to one composed of individual, personal membership, the name "delegate" was retained, but no appropriate functions were provided. Mr. Beal said he regarded it as practically useless for this Association to continue to invite these various organizations and institutions throughout the country to send delegates here to represent them, and then that they should have no recognition whatever. The Association had not time to give them proper recognition, under the present method of doing business; and even if it were to call upon each of the fifty or sixty delegates present for a report on the conditions of pharmacy, pharmaceutical legislation or education in his state or institution, with such recommendations as he had to make, the Association would have no time to consider them. There was need of such a general committee on resolutions, to take up these crude, imperfect resolutions introduced, sift them thoroughly, and afterwards weld them into a complete series, and at the last session of the Council present a completed report as to what they had done. Some body might say, "But suppose we are anxious to have a resolution passed, and it goes to the House of Delegates and the House of Delegates kills it?" This would not affect the rights of the Association at all, nor make such action final, as the

Association could easily resurrect it by the simple process of a motion to take up and consider.

As an illustration, he said that the Council had had before it this very morning some resolutions coming from the National Association of Pharmacologists, relating to the foundation of a home for indigent druggists, which it had no time to consider, although its members were in sympathy with the movement; besides, the resolutions were not in proper shape for adoption. It would be entirely proper to refer such resolutions and others of the kind, to such a body as the proposed House of Delegates, constituted and designed especially for the consideration of such resolutions, and their preparation and presentation in form fit for final adoption.

Mr. Beal said he was willing to admit as valid an objection that had been made to item (b) of section 7, of the resolutions, insofar as it authorized any action by the proposed House of Delegates towards the amendment of By-Laws of the Association, as in the nature of things many of the members of such House of Delegates could not be members of the Association, and he did not think they should have anything to do with the amendment of the By-Laws of this body. At the proper time, therefore, he said he would move that so much of this paragraph as related to the amendment of the By-Laws should be stricken from the draft.

In conclusion, Mr. Beal said that these resolutions had been presented before the Council, and it was their judgment that the establishment of a House of Delegates would expedite the business of the Association and be of all-around benefit. The Council hoped that the Association would give its sanction to a trial of the scheme proposed.

Mr. Lichthardt, of California, as one of those who had indicated his serious opposition to the measure when it first came up on Monday, was the first to voice his approval now, which he did in the heartiest and most unqualified manner. He said it was a "right-up-to-date" proposition, had the "referendum" feature in it, and was in line with the work done in his State. His only criticism was the clause allowing non-members to vote on amendments to By-Laws.

Prof. Bradley was the next to express his approval, and he coupled with it an amendment to the motion to adopt, as made by Mr. Anderson. He said that he had felt at every meeting of the Association he had attended that he was only "a part of the scenery," as delegates had nothing to do but to be delegates. This proposed creation of a House of Delegates was one thing all could understand. It seemed to him that such a body was like the House of Representatives of our Government, and that the Council would represent the Senate of the United States. It even had the "referendum" in it. He said the amendment that he wished to offer to Mr. Anderson's motion to adopt was, that the Association adopt the series of resolutions as read, except that that part of section 7, giving said House of Delegates the right to pass upon amendments to the By-Laws of the Association, which he moved to strike out, as proposed by Mr. Beal, and that the words "President" and "Vice-President," as applying to the officers of the proposed House of Delegates, be changed to "Chairman" and "Vice-Chairman," respectively, in section 4, or wherever they appeared,

in the draft of the resolutions as presented. Prof. Anderson said he would accept the amendment proposed.

Mr. F. T. Gordon, in expressing his approval of the proposed measure, said that he had heard some of the members of the Association say they felt slighted because the Navy Department had not appointed any official delegate this year, as it had done in the past. One of the principal reasons for this was, that when such official delegates were appointed from the Army and Navy and Marine Hospital Corps, they simply came to the meetings and sat around during the week, and no official recognition was given them, and the only thing he could say when he went back and made report was, that he had been at the meeting. He expressed it as his personal opinion that if the Association wanted delegates from the different departments of the Government Service, they should be recognized in some way, because they were sent as Government representatives, just as delegates from the various State Associations and other bodies were sent as their representatives. For these reasons, he was heartily in favor of the establishment of a House of Delegates.

Prof. Schneider seemed to have some doubt as to the desirability of the name "House of Delegates" for the proposed body, as the American Medical Association had a body by that name, as well as some of the State Medical societies, and the functions of the American Medical Association's body were entirely different from those proposed here. He asked whether it was worth while to consider this.

Mr. Beal responded to this suggestion, stating that there were Houses of Delegates of all sorts and degrees — religious, political, civil and others. He did not think the specific character of a house of delegates as such had ever been settled, and the dictionaries permitted a very wide definition of the term. The name was short and easily remembered, and the title was already in existence as applying to similar bodies. He thought the name was not out of place, and would serve a useful purpose.

Mr. Main, while approving of the general tenor of the resolutions, objected to the last clause of Section 3, reading:

"Any member of the Association may attend any session of the House of Delegates, and on motion may be granted the privilege of the floor."

He took the position that any member of this Association should have the privilege of attending the sessions of the House of Delegates and have the privilege of the floor at all times.

Mr. Schlumberger approved the position taken by Mr. Main, and moved to strike out the language quoted, and insert in lieu thereof the words: "and shall be entitled to the privilege of the floor," so that the clause as amended would stand:

"Any member of the Association may attend any session of the House of Delegates, and shall be entitled to the privilege of the floor."

Mr. Beal said that, before closing the discussion on the resolutions, he wanted to move that there be inserted in section 2 of the resolutions as read, in the list of institutions and organizations entitled to send delegates to this Association,

the Official Association of Agricultural Chemists, which would have much to do with the enforcement of the Pure Food and Drugs Law, and also the pharmacists engaged in the various Departments of the Government service. This amendment was adopted.

The question was then put upon the adoption of the resolutions as amended in the several respects indicated, and they were adopted unanimously.

Mr. Gordon here moved to adjourn this session, as it had completed the special order of business set for consideration.

Dr. Whelpley seconded this motion, but said he thought a time should first be provided for a meeting of the new House of Delegates. He moved, therefore, that the House of Delegates be requested to meet at 2 o'clock p. m. this day, in this hall, for the purpose of organization. This motion was seconded by Mr. Beal and carried.

Mr. Wallace, of the Committee on President's Address, said that the report of that committee had not yet been read, and suggested that it might be appropriate to have it presented at this time, and not wait for the last general session on Saturday. No objection was interposed, and the President, in the absence of the First Vice-President, called Mr. England to the chair while this was being done. Mr. Wallace presented the report of his committee. (See September Journal, p. 1023.)

On motion of Mr. Main, seconded by Dr. Whelpley, it was ordered that the report of the committee be received, and the recommendations contained therein adopted.

President Godding resumed the chair, and said that a motion to adjourn was now in order.

Mr. Main asked permission for presentation of the report of the Committee on Time and Place of Next Meeting, which he said was ready. Consent was given, and Mr. Main presented the report. (See September Journal, p. 930.)

Dr. Whelpley moved the adoption of the report as read, and this motion was seconded by Messrs. Schneider and Richardson and carried.

President Godding stated that there was present at this time Mr. Charles M. Woodruff, representing the National Association of Manufacturers of Medicinal Products, and he was sure the Association would be glad to hear from him.

Mr. Woodruff spoke at some length. He thanked the President and members for the recognition given "the baby association," as the National Association of Manufacturers of Medicinal Products had been called. He said he would try to show his gratitude by being very brief, as he appreciated the fact that a Section session was to follow immediately after the adjournment of this session.

Up until last February, Mr. Woodruff said, those who manufactured in a large way the therapeutic agents which were sold throughout the drug trade and ultimately used by the medical profession comprised the only branch of the drug trade that had no organization for mutual benefit, improvement, or social advantage. They had learned when they met that there was an organization of manufacturing pharmacists, — and which had existed as an organization for some time, — known as The American Association of Pharmaceutical Chemists, comprising now about fifty of the smaller manufacturers, none of whom were manu-

facturing jobbers or strictly physicians' supply houses, but whose business was that of manufacturing pharmaceuticals primarily for sale to the medical profession. It might surprise some to know that such an organization existed; that it was a strong organization; that at its last meeting its membership had increased to fifty houses, scattered throughout the country. It seemed that the principal object of that association, — which was a perfectly legitimate one, — was to secure by cooperation the advantages which the larger manufacturing pharmaceutical concerns possessed individually. That was to say, they purchased their supplies through a common broker in the centers from which they purchased, under an arrangement by which they were analyzed. In other words, they maintained a mutual analytical department, so to speak. Another object of this association, as he learned, was to secure an interchange of experience with reference to overhead expenses and charges, some of them having discovered that they had not made a profit on their business.

To return to the subject of the National Association of the Manufacturers of Medicinal Products, Mr. Woodruff said that the meeting in Indianapolis was a tentative one only. About thirty-two, or perhaps thirty-four of the larger houses in the pharmaceutical, chemical and plaster lines, had been invited to come to New York and confer and see if it was feasible or desirable to effect an organization; and all of these responded except two. These invitations were made at random, and were not intended to be inclusive of all those that might be brought into an organization of this kind. The purpose of the organization was similar to the purpose of the American Pharmaceutical Association, the National Association of Retail Druggists, and other similar national associations. They were expressed in the preamble, which read:

"Whereas, For mutual advancement and protection there is a national organization of every branch of the drug trade of America excepting that engaged in the manufacture and production of pharmaceuticals, chemicals, biological and other products ultimately employed by the medical and allied professions for the cure, mitigation, and prevention of disease, than which no department of the drug trade is of higher or more vital importance to the public; and

"Whereas, it is desirable, in the manufacture and marketing of such products, to maintain the high standards generally observed by manufacturers individually during many years past; to encourage and promote still greater achievement; to insure to individual members the just and proper reward of initiative, discovery, and invention; to prevent fraudulent practices in the drug trade; to encourage the lawful enforcement of sound drug legislation and to effect official observance of the fundamental law of the land; to prevent the subversion of law to factional purposes; to amicably adjust differences; to advance uniform and just drug legislation; and in other lawful ways to promote the welfare of and fraternity among those engaged in the manufacture of therapeutic agents for the use of the medical and allied professions;

"Therefore, we do form ourselves into an association and agree to be governed by the following by-laws:"

Continuing, Mr. Woodruff said that the association had had the approval of the medical press generally, the New York Medical Journal being especially felicitious in welcoming the new organization into the field. It had also met the approval of the pharmaceutical press, and it had been recognized by this Association and by the National Association of Retail Druggists, which made a place for it on its program.

Mr. Woodruff, said he would not extend these remarks, for he was sure that the members of this Association would appreciate that the problems of pharmacy were really the same, wherever met. "Our problems are your problems," he

said, "your problems are our problems, whether they are commercial or scientific." What manufacturing pharmacy had done in the last forty or fifty years was a matter of record. An admirable synopsis had been published in the *American Druggist*, in heralding the news of the organization of the National Association of Manufacturers of Medicinal Products. What might be done for the advancement of pharmacy in the future must be by united effort. Radicalism had accomplished much in the way of agitation, but nothing in the actual performance of work. The Constitution of the United States was the result of compromise; "and the work we are doing in the advancement of medicine and pharmacy, — bearing in mind, always, not our own interest, but the interest of the public at large, — must be effected by conference and compromise, giving a little and taking a little, and meeting again upon one common plane."

Continuing, Mr. Woodruff said that the only legislation recommended by the Committee on Interstate and Foreign Commerce, the Sherley Bill, was a bill which the National Association of Manufacturing Pharmacists recommended to be passed; and in its last report this committee, apparently as an argument why Congress should adopt the Sherley Bill, said:

"The legitimate manufacturers of medicinal products admit the necessity of additional legislation along the lines of the proposed bill; and in the recent hearing before the committee on the subject of pure food and drugs, the secretary and counsel for the National Association for the Manufacture of Medicinal Products stated that there was no opposition from them to some effective measure of the kind, intended to meet as far as possible the decision in the Johnson case, and President Taft's recommendation relating to the desirability of making the law more stringent respecting fraudulent nostrums."

His association was the only association mentioned in that report. It seemed to be an argument that there was unanimity in favor of the Sherley Bill; and that was the only bill which there seemed to be unanimity about. And for this reason Congress, recognizing very likely this unanimity, reported the Sherley Bill — which, really, was as effective a bill as could be passed, in the opinion of many who had studied the constitutional aspect of the matter, for the purpose of restraining fake cures.

In conclusion, Mr. Woodruff thanked the convention for the attention that had been given him, and expressed the hope that this association and his might be mutually helpful. The drug trade needed the help of the manufacturers, he said, and the manufacturers needed the help of the drug trade. Both had commercial and scientific problems to meet, and neither could control conditions alone.

On motion of Prof. Philip Asher, of New Orleans, the Association then stood adjourned, to the final session on Saturday morning.

FOURTH (AND FINAL) GENERAL SESSION—*Saturday Morning, August 24, 1912.*

The Association was late in assembling for its final general session, on account of a prolonged session of the Council Saturday morning. The members were not called to order by President Godding until 11:30 o'clock.

The Secretary read the minutes of the called session of Wednesday morning, which, on motion of Mr. Wallace, seconded by Mr. Meissner, were adopted as read.

The Secretary read the following communication:

TELEGRAM.

As president of the Canadian Pharmaceutical Association, I have appointed Prof. Joseph P. Remington delegate to convey our greetings to your Association.

We feel honored in having so distinguished a member to represent us. Have also appointed Messrs. Goyer and Jolicoeur, of Montreal, as delegates.

Trust you will have a most enjoyable and profitable meeting.

JNO. H. JURY, President.

LETTER.

To the President and Members of American Pharmaceutical Association:

GENTLEMEN—I have had the honor, with my friend Mr. Jolicoeur, of Quebec, of being appointed delegate of the Canadian Pharmaceutical Association to your annual convention in Denver.

I had accepted with pleasure the honor of bringing to you the most sincere thanks for your kind invitation to attend your convention.

I deeply regret that while on my way to Denver, I was recalled to my home and that I will not be able to attend.

Nevertheless, I wish to extend to you the message of congratulation for your good work in the past towards bettering the ethical standing of the druggists of America, and the good results you have obtained so far, and also the message of best wishes that the Canadian Pharmaceutical Association, at a regular session of its convention, has voted to her sister association, the American Pharmaceutical Association.

I would express the hope that a greater number of Canadian druggists should join the ranks of the American association, because I think that our interests are identical, as in both countries the same evils exist. Many of my confreres have forgotten the professional point of view of the drug business, and are now simply business men, and I must admit that I personally am guilty of the same offense, but I am convinced that if we were better acquainted with the work of the more prominent members of both associations we would soon repair our professional dignity without losing any part of our business ability.

Before closing, I wish to bring to your attention the kindness of Mr. Frank, president of The Blumauer-Frank Drug Co., of Portland, who has helped my companion, Mr. Jolicoeur, and me, when we were on our way to San Francisco, in a most generous way because we were delegates to your convention.

I would have liked very much indeed to be able to attend your convention, and bring you personally our thanks for your kind invitation and the best wishes of the Canadian Pharmaceutical Association, but I said previously I am recalled home hurriedly, and beg you to accept my regrets for not being able to attend.

My companion and fellow delegate will be in Denver on the twenty-fourth, and will speak in both his and my name.

Very truly yours,

J. A. GOYER.

On motion, it was ordered that the communications be received and replied to by mail.

The Secretary announced that he had received telegrams of greetings and best wishes for a successful meeting from Theodore C. Wetterstroem, of Cincinnati; Oscar Oldberg, of Chicago, and Charles H. LaWall, of Philadelphia. On motion of Mr. Mayo, the Secretary was directed to make suitable acknowledgement of these telegrams by mail.

The President stated that the next order of business would be the reading of the minutes of the Council, and Secretary England read the minutes of the sixth session of the Council of 1911-12, held August 22, 1912, at 9 a. m. (See Proceedings of the Council.)

On motion of Mr. Day, of Chicago, the minutes of the Council were adopted.

Mr. England then read the minutes of the first session of the new Council for the year 1912-13, held on August 22, 1912. (See Proceedings of the Council.)

On motion of Mr. Mayo, the minutes of the first session of the new Council were adopted as read.

Mr. England read the minutes of the second session of the new Council, held this date—August 24, 1912. (See Proceedings of the Council.)

Prof. Beal said that in order that an erroneous idea might not be had as to the reasons for laying the various propositions referred to in the Council proceedings on the table, it should be stated that it was not done because of any opposition to the resolutions in question, but that they seemed to the Council not to be drafted in sufficiently definite form to be presented for the consideration of the Association. For example, the resolution concerning the Richardson Bill: The recommendations made for amending the bill were very numerous, some which the Association could approve, and others which it could not approve, and the Council felt that the resolutions should have specified the amendment to be approved so that the members would have full knowledge of the points involved, when they came to vote upon them.

Dr. W. C. Anderson explained that the resolutions had been presented at the last session of the Section on Education and Legislation, when the House of Delegates had finished its work and sent to the Council all the recommendations it had intended to make. He said that these resolutions were referred to the Section late at night, and the House of Delegates, having very little time to give them thorough consideration in all their detail, the only thing it could do was to refer them to the Council, with these recommendations, believing that the Council would do the wise thing about these matters.

Mr. Mayo moved the adoption of the minutes as read, including the adoption of the resolutions, except resolution No. 8 in its present form, which he desired to amend. The resolution now stood:

"Resolved, That this Association favors interstate anti-narcotic legislation that will prohibit all illegitimate traffic in narcotics and habit-forming drugs, and confine their sales to proper channels, and their use to strictly medicinal purposes."

He moved to amend by adding the following:

"But that we disapprove of House Resolution 25239, known as the Harrison bill, as being impractical of enforcement, and not calculated to prevent the illegitimate use of narcotics and habit-forming drugs."

Mr. Wallace seconded the motion of Mr. Mayo and it was carried.

Mr. Becker, said he noticed that the words, "U. S. Pharmacopoeia and National Formulary" had been used during the reading of the minutes of the Council as applying to the proposed Section on that subject. It was his recollection that the tentative section had adopted the ampler words "Pharmacopoeias and Formularies," thus broadening the scope of the proposed body, so as to include the Homeopathic Pharmacopoeia and such other pharmacopoeias and formularies as it might be desirable or necessary to consider.

Mr. Mayo, in response to Mr. Becker's statement, said he was present at the time, and that the title of the section was, "U. S. Pharmacopoeia and National Formulary," but in reciting the functions of the section, the word "Pharmacopoeias" was used advisedly.

Mr. Wallace moved to amend to the effect that the Association adopt the minutes of the council as read, with the exception of the resolutions coming from the House of Delegates and referring to the matter of legislation, and that these be referred to the incoming Committee on National Legislation.

Prof. W. C. Anderson, in seconding this motion, said that to lay these propositions on the table for one year would practically mean that no action would be

taken on important legislation pending at Washington at the present time. Therefore, he thought such matters ought to be referred to the incoming Legislative Committee, so that they would know what legislation was proposed, and what action other associations were taking. The resolutions presented were in effect the same as those adopted by the N. A. R. D. in reference to pending legislation. He was willing to admit that the Council was perhaps not in a position to adopt all of them, since all the members of the Council did not keep as well posted on this subject as they should. He thought perhaps they did not understand what the Harrison Bill was, or what the Owen Bill was. And yet there were propositions pending at Washington, and liable to be passed at any time, which, if passed, would practically legislate the retail drug business out of existence—would ruin it absolutely. He believed that the Association should do something to prevent that legislation from being enacted; and if it did not want to go on record as condemning bills—bills which he thought ought to be condemned by every pharmaceutical association—because of lack of information concerning them, or lack of time to take them up in all their details and thoroughly understand them, the matter should at least be referred to the incoming Legislative Committee of this Association, and let them use their judgment about these matters.

Mr. Meissner said that he thought that as this matter was practically the report of the conference of the Legislative Committees of the two bodies, and having been already adopted by the N. A. R. D. at its meeting prior to that of the A. Ph. A., it was entitled to the fullest possible consideration.

Prof. Beal said he wished to support the motion now pending, as made by Mr. Wallace and seconded by Mr. Anderson, to refer these matters to the incoming Committee on National Legislation. The possibility of such action did not occur to the Council at the time, or it would doubtless have been taken. The action of the Council was based upon the idea that resolutions which came from the House of Delegates should be framed so definitely that every one voting upon them would have a clear idea of what he was voting for, so that the stand of the Association on these questions could not be doubted. He thought every member of the Council approved of the spirit of these resolutions, but they wanted them in better shape.

The chair then put the vote upon the adoption of the minutes of the Council as read, except that portion referring to legislation, which would be referred to the incoming Committee on National Legislation, and it was carried.

Prof. Anderson stated that a very important resolution was referred to the Council by the Section on Education and Legislation, with reference to the future work of the Pharmaceutical Syllabus. He did not notice any reference to that in the Council minutes as read.

Mr. Wallace, as chairman of the Committee on Education and Legislation, stated that the report of the Syllabus Committee was included in the papers of the Section which had been turned over to the Secretary, and the package containing all these papers was supposed to have been turned over to the General Secretary. Mr. Beal's response to this was, that the papers from the Educational Section had been handed to him so recently that he had not had time to go through them, and did not know what was in the bundle.

Prof. Anderson said that, in order to bring the matter up in the form which

he believed it should have been brought up, he would now move "that it be declared the sense of the American Pharmaceutical Association that, while much of the preliminary work of revising the Pharmaceutical Syllabus might be conducted by correspondence, final action concerning all that should be contained in the final revised edition, should be had at a meeting or meetings of the Committee of twenty-one called for that purpose."

This motion was seconded by Mr. Wallace and carried.

The chair asked if there were any reports from special committees to be made.

Mr. England said he had the report of the Committee on Drug Reform, which had been referred by the Council to the Association. He said this report was in support of the work of the Committee on Drug Reform, and Prof. Sayre had suggested that the following be adopted:

"In support of the work of the Committee on Drug Reform, this Association records its objection against any practice of dispensing medicine which tends to subvert the rigid application of the Food and Drugs Law."

On motion of Mr. Mayo, the resolution was adopted.

Mr. England said he had the report of the Committee on Revision of the Constitution and By-Laws, the introductory portion of which he read as follows:

REPORT OF COMMITTEE ON REVISION OF CONSTITUTION AND BY-LAWS.

American Pharmaceutical Association:

GENTLEMEN—Your Committee on Revision of the Constitution and By-Laws has made a careful study of the work of the revision. The Constitution was devised many years ago and has undergone few changes. The By-Laws were framed years ago, also, but have had frequent changes, as exigencies arose, from time to time, and hence, do not form a comprehensive well-balanced system of laws adapted to the present-day needs of the Association, as they should.

Upon first thought, your committee felt that it would be necessary only to propose changes in a few of the By-Laws, but a closer study, in the light of numerous suggestions received, and especially in view of the desire expressed by the Association that the executive machinery of the Association should be simplified and made more effective by enlarging the duties of the Council, and the general sessions of the Association be relieved of the larger part of their details, the committee found it necessary to practically re-write every article in the By-Laws not to change the intent of the articles, necessarily, but to express their meanings more clearly and to better classify.

The report is, therefore, a voluminous one, and your committee feels that unless the members of the Association had the present Constitution and By-Laws and the proposed revision printed in parallel columns, or on opposite pages, so as to have before them the proposed changes, it would be difficult for them to follow the subject and give these important questions the consideration they should have.

It has not been practicable for your committee to have this done, and the members therefore recommend that the proposed revision of the Constitution and By-Laws herewith submitted, be received, be printed in full in the JOURNAL of the Association (along with the existing Constitution and By-Laws), and be voted upon at the next annual meeting, and also that reprints of these articles in the JOURNAL be made in pamphlet form for use in the further consideration of the subject.

In this way every member of the Association will have a chance to review the subject matter of revision.

In addition, such a procedure will have the added advantage of changing the Constitution and By-Laws at the same time, if desired. As is well known, a proposition to amend our present Constitution can only be made at one annual meeting and voted upon at the next, and it would be quite difficult to amend the By-Laws along new lines, and not be able to amend the Constitution at the same time, especially if we wished to create a new office in the Association, such as, for example, that of the editor of the JOURNAL of the Association. (The editor of the JOURNAL is at present an officer of the Council.)

We believe that no interest of the Association would suffer by the delay of a year, and ask consideration of the recommendations above made.

Respectfully submitted,

J. W. ENGLAND, Chairman.

After some discussion participated in by Messrs. Gordon, England, Day, Beal, Clark and Mayo, the report was ordered to be received and printed in the Jour-

nal, together with the text of the proposed revision of the Constitution and By-Laws.

President Godding asked if there was any further business to come before the Association.

Prof. Anderson said he believed every member of the American Pharmaceutical Association present, and every one who had been in attendance at this meeting, realized most thoroughly the splendid entertainment that had been provided for the pharmacists by the Local Committee. They had not only had the superb air of Colorado, but he thought the Local Committee must have had some influence on the weather, for it had been delightful throughout the meeting. While time would not permit of going into details as to the different pleasures enjoyed, he believed that all felt deeply indebted to the committee for the cordial reception, splendid entertainment and hearty good will that had been shown upon all sides, by the people of Denver, the people of Boulder and every place they had visited during the convention. He therefore moved a rising vote of thanks to the Local Committee and to all those who had assisted in making the stay of the visiting delegates so pleasant and profitable.

This motion was seconded by Dr. Otto Claus and others, and was carried unanimously by a rising vote.

Mr. Meissner moved a rising vote of thanks to the retiring officers for their splendid services, and for the success of this meeting. This motion was also seconded by Dr. Claus, and, to save the embarrassment of the President, Mr. Meissner himself put the vote from the floor of the house, and it was carried most heartily.

Mr. Philip offered the following:

"That all letters or circulars sent to the State associations by the A. Ph. A., or by its Committee on National Legislation be sent also to such local, city or county associations whose names are filed with the Secretary."

Mr. Philip said that he believed such action would help in the cause of securing desirable legislation during the coming year.

This motion was seconded by Dr. Schneider and carried.

The chair stated that if there was no further business to come before the Association, the installation of the new officers of the Association for the year 1912-13 was the final order of business. To that end, he would appoint as a committee to conduct the newly-elected officers to the platform, Messrs. John C. Wallace, of Pennsylvania, and Otto F. Claus, of Missouri. He first asked the committee to escort the President-elect, Wm. B. Day, of Chicago, to the rostrum.

Mr. Wallace introduced Prof. Day in appropriate words. He said that the American Pharmaceutical Association was recognized as a deliberative body, not only in the United States, but wherever pharmacy was known, and it was fit that it should have elected to the highest office in its gift such a man as Prof. Day.

President Godding turned to the President-elect, and, suiting the action to the word, said to him that it became his great pleasure to pin upon his breast the badge of office as President of the American Pharmaceutical Association. He felt sure that he voiced the sentiments of the members when he said the Association was fortunate in securing the services of such a man for presiding officer.

Mr. Day, in acknowledging the honor conferred upon him, spoke as follows:

"Mr. President and Members of the Association, Ladies and Gentlemen: This is undoubtedly a very proud and happy moment to me. I have looked forward to this day for many months, although with somewhat mingled feelings. First, a feeling of great pride, for I consider this the greatest honor that could come to any American pharmacist; then a feeling of happiness, in that you have deemed me deserving of your confidence; also a feeling of apprehension and anxiety in assuming such a responsible duty. These feelings of anxiety, perhaps, might have prevented my accepting the nomination at the time it was made, had I thought in the first place that I had any show of being elected, which seemed improbable; and in the second place, had I not been assured of the support of so capable and loyal a body of colleagues as my fellow officers—had I not been certain of your earnest cooperation. I disclaim any merit of worthiness for so high an office. The honor was unlooked for, but nevertheless most welcome. The responsibilities are accepted, with the fullest measure of appreciation of their importance. I will endeavor to discharge the duties imposed upon the President to the utmost of my poor ability, and I earnestly hope to deserve your continued confidence. Denver seems to be destined to play a very important part in my life. I became a member at the Denver meeting in 1895. It is true I was not present at that time, but I made application and was elected to membership then, and presented a paper at that time. And now, seventeen years later, I am installed in this high office, in this fair city. Again expressing my deep appreciation of the honor that you have conferred upon me, and again assuring you of my most heartfelt gratitude, and my most earnest desire to serve you and the Association, I thank you."

At this point, Miss Rose P. Schmid, of Chicago, came forward with a large cluster of roses, and said to the new President:

"Prof. Day, on behalf of the Chicago members of the American Pharmaceutical Association now in session, I present you these flowers, as a token of the honor and love in our hearts for you."

President Godding asked the same committee to conduct First Vice-President Charles M. Ford to the platform. They did so, and Mr. Wallace expressed his extreme pleasure in having the opportunity of presenting this "pilgrim penitent" to the Association, as the man honored with the second highest office in its gift.

Mr. Ford first thanked the "orator of the occasion" for the high encomium passed upon him, and then thanked the members heartily for the honor conferred. The office of First Vice-President of this Association was not analogous to that office in political bodies, where it was looked upon as a place to "cast dead timber," but carried with it obligations as a member of the Council of the Association—as one of the advisers of this body. In Colorado, they were accustomed to high and dangerous eminences, and he realized that he had "hit a high place today." He was determined, however, to endeavor to so conduct himself in office so that the things the Association stood for should be represented in him.

The same committee was asked to escort to the platform Second Vice-President Caswell A. Mayo, of New York, who was introduced by Dr. Claus.

Mr. Mayo said he had been a member of the American Pharmaceutical Association for more years than he would care to name, and had attended every meeting of the organization since he joined it, save that held at Los Angeles in 1909. He had taken part in its deliberations, and had done what was in his power, both during the meetings and in the interim, to further its objects and increase its prestige. He would make an additional effort now to further the interests of this admirable organization.

Third Vice-President C. Herbert Packard, of Boston, was next introduced by Mr. Wallace, who spoke of Mr. Packard's excellent work as chairman of the Local Committee of Arrangements of the Boston meeting last year, and said this elevation to the responsible office of Third Vice-President was a recognition of his ability.

Mr. Packard said he was flattered that he should be selected as one of the Vice-Presidents of this Association, as he was comparatively a new member. As President of the New England Branch for three years, he had become very much interested in the purposes and work of this Association, and his work as Local Secretary at Boston had been a real pleasure to him. The meeting at Boston was his first real introduction to the Association, he felt, for there he had made many acquaintances and good friends—more than he would have made in years, ordinarily. He appreciated the honor of being elected Third Vice-President, and would do all he could to advance the interests of the Association in every possible way.

General Secretary-elect Beal was the next of the new officials brought forward by the committee, and Mr. Wallace waxed eloquent in his words of introduction.

Mr. Beal said that while a certain "poetic license" was allowed to those who made speeches of introduction, he thought the limit of the license had been slightly exceeded by Mr. Wallace. He thanked the Association sincerely for the honor conferred. He had accepted this office last year, with much hesitation, but with strong resolve and high ambition. He was ready to admit now, however, that out of a possible one hundred points of efficiency he might have realized 17 1/2 per cent. of accomplishment of the work he had intended to do. The measure of success he had had was largely due to the fact that the Association's former able General Secretary had always stood ready to assist him with advice and information, and because he had been able to command help and advice of the "best Treasurer in the world." A too partial friend had said to him a few minutes ago that he might be called to a higher position soon, but he did not recognize that there existed any official position where a man could do more good for American pharmacy and for the general public, in all that related to the purity of food and drugs, than the position as one of the general officers of this Association. He was satisfied, and sought no further and no higher honors.

Treasurer-elect Whelpley was next conducted to the platform, and Mr. Wallace introduced him as a man who could "collect the dues of any organization, fraternity or association," and he thought that a man deserved the plaudits of the organization with which he was affiliated when it could be said of him that no member whose name appeared on the roster was behind in his dues more than five weeks. Such a man likewise merited continuance in the office, and was entitled to the honors which pertained to it.

Dr. Whelpley said he was beginning to think that he knew what to say when it came to writing to a delinquent member, but he had not been Treasurer for a sufficient number of successive years to determine what sort of speech he should make on an occasion like this. He wanted to thank the members, however, for their cooperation in enabling him to make the record for the Association that had been made. It was not the individual work that he had done that had brought about the change in the financial condition of the Association as much as it was his ability to get others into line and secure their services. He was somewhat at a loss to know what to do in the next twelve months to earn his salary—a salary which, by the generosity of the Association, had been increased at the last annual meeting. There would be but little by way of dues to collect, and but few delinquents to look after. He referred with great satisfaction to the accession of 408 new members to the Association, and agreed with the General Secretary that they had been secured in a way to insure their remaining with the Association as long as they were interested in pharmacy. Likewise, it gave him pleasure to state that the American Pharmaceutical Association was on a solid financial basis, with a substantial amount of funds in its treasury. Most of this was in the shape of special funds, and the interest only upon which could be used. The Association now had funds to the amount of \$56,000, which he thought was a good showing for an organization of pharmacists. In conclusion, Dr. Whelpley thanked the Association for this renewed evidence of confidence, and likewise thanked the members for their cooperation in his work.

President Godding noted the absence of the Reporter-elect on the Progress of Pharmacy, C. Lewis Diehl, of Kentucky, and also that of the Local Secretary for next year's meeting, J. O. Burge, of Nashville, Tenn. Likewise, he said of the new members of the Council, William C. Alpers, of New York; F. C. Godbold, of New Orleans, and Lucius E. Sayre, of Kansas, only Mr. Godbold was present, and he would ask the committee to conduct him to the platform. This was done, and Mr. Godbold briefly expressed his thanks, both personally and on behalf of his colleagues who were not present, for the honor of election to the Council.

President Godding said that this concluded the installation of officers, but before giving the convention over to his successor, he wished to say that he appreciated highly the honor that had been conferred upon him in electing him President of the Association last year. He wanted to express his appreciation to the officers and members who had contributed so much to what he had been able to do. It had been fortunate for his administration that the Journal was instituted during his term of office. It was a period that would always be memorable with him.

The retiring President then presented Prof. Day with the gavel, and told him the convention was now in his hands.

The new President took the chair, and said that he assumed that the duties of this session were practically completed. He asked if there was any further business to come before the Association.

Dr. Whelpley said that, before adjournment, he wanted to move that this Association extend a hearty vote of thanks and appreciation "to our friends and

other members from Cuba, who have been with us during our deliberations." Mr. Meissner seconded this motion.

President Day said he knew that all were of one mind upon Mr. Whelpley's motion; that it had been the subject of remark before the meeting that the representatives from Cuba were deserving of the highest commendation for their attendance at so great a distance from home, as also for their evidences of interest in the Proceedings of the Association, and its welfare—an interest which he hoped would continue, and result in the establishment of a branch of the American Pharmaceutical Association in Havana. He invited further remarks on this subject.

Mr. Mayo said that, in seconding this motion, it seemed to him that pharmacists should do everything in their power to make this Association in fact, as well as in name, truly the *American* Pharmaceutical Association—an association not confined to the United States, or even to the possessions of the United States, but an association embracing—as had been described by a distinguished gentleman on another occasion—everything distinctively American; from the Aurora Borealis, to the Southern Cross and from the rising sun on the east to the setting sun on the west. He said he was sure that everyone present was grateful to these Cuban friends, who had come such a long distance and taken such an intelligent, helpful part in the deliberations of the Association. He knew that all would be glad to see them again; and it afforded him great pleasure to second this resolution, which tended to encourage attendance from other sections of America.

The motion was then carried by a unanimous rising vote.

Prof. Jose P. Alacan, making acknowledgment for himself and associates, said he was sorry he did not speak the English tongue with sufficient facility to express all he felt, and he could only thank the members for the action they had taken.

Mr. Ford said the Association had taken occasion to call attention to the powerful attractions of Denver as a place of meeting, in that so large a part of Havana's population should have come here at this time. He also wanted to express his personal appreciation of the presence of these gentlemen in this city and state. While on this subject of showing what Denver could do as a place of meeting in attracting from far distances, he wanted to call attention to the fact that thirty-eight states of the Union were represented at this meeting and he thought this was about as large a representation of the States as this city had ever had. He also commented on the fact that there were more new members made at this meeting than at any other annual meeting.

President Day said he was sure that all agreed with Mr. Ford that this had been one of the most thoroughly enjoyable meetings the Association had ever had. The entertainments particularly were greatly enjoyed, and the business sessions had been facilitated, not only by the commodious quarters afforded, but very much so by the weather conditions. The Denver people, he said, certainly seemed to have "the right stand-in" with the weather man.

Mr. Jones, of South Dakota, said that resolutions of thanks had been passed to the Local Committee, and even the weather and the atmosphere had come in for compliment, and he thought it was now time to say a word on behalf of the ladies of Denver, and their splendid work in contributing to the pleasure of this

meeting. He moved, therefore, a vote of appreciation and thanks for the kind interest the ladies of Denver had taken in the comfort and happiness of the delegates to this convention. This motion was seconded by Dr. Claus and unanimously carried.

Mr. Anderson then moved that the convention now adjourn *sine die*. This motion was seconded by Mr. Scoville and carried, and the Association stood adjourned, to meet next year at Nashville, Tennessee.

PROCEEDINGS OF THE COUNCIL FOR 1911-12.

(Third Session.¹)

The third session of the Council of the American Pharmaceutical Association for 1911-12 was held Monday, August 19, 1912, at 9 a. m., at the Brown Palace Hotel, Denver, Chairman Eberle presiding.

Present: Messrs. Godding, Rusby, Utech, Remington, Beal, England, Eberle, Koch, Whelpley, Asher, Richtmann, Berger, Wallace, Clark and Day.

The minutes of the previous meeting and the Council Letters for 1911-12 having been published in the *Journal*, the reading of the same was on motion dispensed with.

By Motion No. 31 (Council Letter No. 14, Feb. 26) Chairman Eberle was directed to appoint a committee of three members of the Association, of which the Chairman of the Committee on National Legislation was to be the Chairman, to consider the possibility of closer cooperation between the American Pharmaceutical Association and other pharmaceutical organizations in matters of legislation affecting pharmacy; and he appointed the following "Committee on Cooperation in Pharmaceutical Legislation:" W. S. Richardson, Chairman, H. P. Hynson and J. H. Beal.

H. P. Hynson having declined to serve on the committee, Chairman Eberle, under date of July 24, 1912, advised your Secretary that he had appointed John C. Wallace in place of Mr. Hynson, and that he had accepted the appointment.

John C. Wallace reported on behalf of the Committee on Cooperation on Pharmaceutical Legislation concerning the conference had with the N. A. R. D. at its Niagara Falls (1911) meeting.

J. H. Beal moved, seconded by J. P. Remington, that Mr. Wallace be asked to prepare an outline of a program for a legislative conference to be held between the American Pharmaceutical Association and other bodies during the ensuing year, the outline to be reported to the Council at a later session. Motion carried.

The annual report of the Secretary of the Council was then read, as follows:

REPORT OF THE SECRETARY OF THE COUNCIL.

To the Members of the Council:

GENTLEMEN—The Council has held two meetings and has transacted business by mail since the Boston (1911) meeting.

Twenty-three Council Letters have been issued, covering fifty-two pages and conveying forty-seven motions.

The members elected during the year to date number 379. The largest number previously elected was 407 in 1911.

¹The first and second sessions of the Council for 1911-12 were held at Boston, Aug. 17-19, 1911.

A synopsis of the minutes of the Council will be submitted and become a part of the published records. The minutes up to July 6, 1912 (Council Letter No. 22), have been published in the JOURNAL.

The membership of the Council now numbers thirty-five of these thirteen are Branch representatives.

Two members of the Council have passed away during the year, George H. Hitchcock, Council member from the New York Branch, and Henry Biroth, Honorary President of the Association.

Three members of the Council for the year 1912-13 elected by mail in November last were: Wm. C. Alpers, Fabius C. Godbold and Lucius E. Sayre.

Respectfully submitted,
J. W. ENGLAND,
Secretary of the Council.

August 12, 1912.

On motion of J. H. Beal the following Committee on Credentials was appointed by Chairman Eberle: J. A. Koch, P. H. Utech and Charles E. Caspari.

Applications for membership from Nos. 332 to 379 inclusive were received and on motion elected. The names of the applicants were:

- No. 332. Chas. H. Achelphol, 1201 State street, Quincy, Ill.
- No. 333. Geo. B. Topping, 61 Parsons avenue, Columbus, O.
- No. 334. Philip August Schlumberger, 122 Broadway, Denison, Ia.
- No. 335. Ingewald A. Anderson, Dow City, Ia.
- No. 336. Edwin Thomas Thompson, 911 West Seventh street, Sioux City, Ia.
- No. 337. William D. Jones, 107 E. Bay street, Jacksonville, Fla.
- No. 338. Edwin Massa Norton, 502 Florida avenue, Jacksonville, Fla.
- No. 339. Macon Thornton, Ormond, Fla.
- No. 340. W. J. Maloy, White Springs, Fla.
- No. 341. Ernst Billhuber, care Knoll & Co., 45 John street, New York, N. Y.
- No. 342. Frederick Clinton Dodds, State House, Springfield, Ill.
- No. 343. Sidney Hauenstein, Bluffton, O.
- No. 344. Richard J. Messing, 296 Sibley street, St. Paul, Minn.
- No. 345. John A. Mahaffy, 652 E. 89th Place, Chicago, Ill.
- No. 346. August Frank, 408 Main street, "Town of Union," Weehawken P. O., N. J.
- No. 347. Dr. Francisco J. Carbonell, Yaguajay, Cuba.
- No. 348. Berthold James Kremer, 88 S. Main street, Fond du Lac, Wis.
- No. 349. Charles Adam Keim, 115 W. Mifflin street, Madison, Wis.
- No. 350. Walter G. Williams, Charlotte C. H., Va.
- No. 351. John E. Jackson, Tazewell, Va.
- No. 352. Charles Dunsmore Fox, 202 Commerce St., Roanoke, Va.
- No. 353. John J. Buehler, Pocatello, Idaho.
- No. 354. Clyde Francis Hughes, 1603 6th avenue, Altoona, Pa.
- No. 355. Joseph Edward Bumbera, 1213 Washington avenue, Braddock, Pa.
- No. 356. Charles Raymond Wambaugh, 1122 Ross avenue, Wilksburg, Pa.
- No. 357. Moses Montgomery, Sgt. Hosp. Corps, U. S. A., Fort San Pedro, Hoilo, Panay, P. I.
- No. 358. Thomas Ramsay Taylor, Park and Brambleton avenues, Norfolk, Va.
- No. 359. Henry Cordes, 1301 Curtis street, Denver, Col.
- No. 360. Miss Zoe Coats, box 185 University Station, Seattle, Wash.
- No. 361. Garrett Byrnes, 21 Maplewood avenue, Maplewood, N. J.
- No. 362. Lloyd Egbers, 601 Main street, P. O. Box 103, Canon City, Col.
- No. 363. William O. Scholtz, 1001 16th street, Denver, Col.
- No. 364. William Kirk Van Liew, Akron, Col.
- No. 365. Winfield Scott Payne, 1013 10th avenue, Denver, Col.
- No. 366. Samuel Theodore Hensel, 1440 Washington street, Denver, Col.
- No. 367. Mathew Whipple, 3808 Lexington street, Chicago, Ill.
- No. 368. Geo. M. Andrews, Nos. 9 and 11 N. Main street, Woodstown, N. J.
- No. 369. Robert Allen Hamilton, Colorado avenue, Sugar City, Col.
- No. 370. Corliss Duffey Charles, 123 S. Logan street, Denver, Col.
- No. 371. W. I. Hess, 818 Bridge street, Humboldt, Kan.
- No. 372. William Boyd Campbell, 1415 Court Place, Denver, Col.
- No. 373. Carl C. Weimer, 2247 Curtis street, Denver, Col.
- No. 374. Herbert M. Snider, 1114 Logan street, Denver, Col.
- No. 375. Gus C. Kendall, 4 S. 22d avenue, Meridian, Miss.
- No. 376. Walter Ferdinand Meyer, Denver, Col.
- No. 377. Walter Frances Wohlfarth, 117 Eighth avenue, Homestead, Pa.
- No. 378. Lawrence John Miller, 610 Park street, North, McKeesport, Pa.
- No. 379. David Ralph McMonigle, 3330 Fleming avenue, N. S., Pittsburgh, Pa.

The following letter from the Chemists' Club of New York, addressed to C. Lewis Diehl and referred to the Council was read:

Prof. C. Lewis Diehl, Louisville, Ky.:

DEAR SIR—At the suggestion of Mr. Albert Plaut, I am writing you in regard to volumes of the Proceedings of the American Pharmaceutical Association missing from our set. We lack: 1-7; 9-13; 41; 45; 50; 52 et seq.

If you can help us to get any or all of these for the club library, you will be conferring a great benefit.

Yours very truly,
D. D. BEROLZHEIMER,
Librarian Chemists' Club, New York.

On motion of J. P. Remington, seconded by J. W. England, the request was granted in so far as it could be done without unduly depleting the stock of Proceedings.

The following proposal for a message of greeting to the International Pharmaceutical Federation, presented by J. P. Remington, was read:

The American Pharmaceutical Association congratulates the Fédération Internationale Pharmaceutique upon the work which it is doing for scientific pharmacy in raising the standard of pharmaceutical education, advancing needful legislation, and improving the status of pharmacists and chemists throughout the world.

This Association, numbering over twenty-five hundred members in America, pledges its support to the Fédération Internationale Pharmaceutique in all movements which will elevate pharmacy.

We desire to establish friendly relations with your body, and we tender you our best wishes for the success of your Fédération.

On motion of J. H. Beal, seconded by H. M. Whelpley, the proposed message of greeting was approved.

A telegram from George F. Payne expressing his regrets at not being able to attend the meeting was read.

On motion of J. H. Beal, seconded by J. C. Wallace, F. R. Eldred was elected Acting Chairman of the Section on Scientific Papers; and, on motion of H. M. Whelpley, seconded by Chas. E. Caspari, F. W. Nitardy was made Acting Secretary of the Section on Practical Pharmacy and Dispensing.

On motion of P. H. Utech, seconded by W. B. Day, C. A. Mayo was made Acting Chairman of the Historical Section.

J. H. Beal submitted the following proposal to establish a House of Delegates. (See September *Journal*, p. 928.)

After being read as a whole, the resolutions were read and discussed seriatim.

On motion of J. H. Beal, seconded by H. M. Whelpley, the resolutions were adopted and referred to the Association.

The General Secretary made a statement regarding the stock of Proceedings of the Association. It was as follows:

REPORT ON PROCEEDINGS AND HISTORICAL DOCUMENTS IN THE HANDS OF THE GENERAL SECRETARY.

The proceedings in the hands of the General Secretary, including bound and unbound copies, and the index to the first 50 volumes are contained in 65 packing cases and are, in accordance with instructions, stored in the building of the former Scio College of Pharmacy, at Scio, O. Historical documents, such as albums, old account books, bound volumes of applications for membership and bound volumes of the earlier meetings of the society written in longhand, etc., etc., are contained in packing cases and are stored at the same place.

Upon these there are two policies of insurance of \$1,500 each, for three years.

Throughout the period of the present Secretary's service, advertisements and notices of the proceedings have been constantly carried in the former *Bulletin* and the present *Journal*, but notwithstanding the great value of these volumes, the sale to date has been extremely small, amounting in eleven months to only \$98.31.

Some time during the past winter Prof. J. U. Lloyd made, on behalf of the Lloyd Library of Cincinnati, a proposition to care for and utilize the stock of proceedings, which proposition, on the request of the General Secretary, was later reduced to writing and is submitted herewith.

In case the submitted proposition should find favor with the Council, it would probably be well to modify it so that a minimum of 10 volumes for any year shall always be kept subject to the order of the Association. And also that the Lloyd Library shall receive and store, subject to the order of the Association, historical and other material for which the Association does not at present possess any other proper repository.

J. H. BEAL, General Secretary.

Scio, Ohio, Aug. 6, 1912.

The following communication from the Lloyd Library was then read and referred to the Committee on Publication:

Cincinnati, O., February 29, 1912.

Professor J. H. Beal, Scio, Ohio:

DEAR PROFESSOR BEAL: I have had your letter of February 12 under consideration for some time in order to formulate a definite plan. Just at present we have under construction a new warehouse which we expect will be finished in the course of about three months and then we will be in position to enter definitely into an arrangement with your society that we think will be agreeable to yourselves.

1st. We will take charge of all the publications issued by your society in annual form and will attend to the addressing and distributing to your members as well as the exchange list.

2d. The Lloyd Library will take charge of the present stock of back numbers of the Proceedings, systematically arrange, list and store them, and send them out as directed by the secretary of the American Pharmaceutical Association.

3d. The Lloyd Library will assume all expense of correspondence, addressing and distributing of said publication, but the expense of carriage must be borne by your Association if they be sent prepaid. Foreign exchanges will be distributed through the agency of the Smithsonian Institution, Washington, as now arranged for Lloyd Library publications, and there will be no expense in connection with them.

4th. The exchange list is to be placed in our hands and we will attend to the correspondence and enter into exchange relations in the name of the American Pharmaceutical Society with all associations of a similar nature throughout the world where it is possible to arrange an exchange, your Association to furnish not less than one hundred (100) copies of your annual publication to be used for exchange purpose.

5th. All publications received on exchange account will be sent to the American Pharmaceutical Association, Cincinnati, Ohio, *but are finally to be incorporated in the Lloyd Library and become a part of the Lloyd Library.*

6th. The Lloyd Library will on request supply to the editors of the American Pharmaceutical Association copies of such exchanges as they may desire and in addition any journals that may be received by the Lloyd Library, such publications to be returned to our library ENTIRE AND UNCUT.

Negotiations are under way and most assuredly will be consummated with the Natural History Society of this city, for the Lloyd Library to take charge of their publications and their exchange department and systematically preserve the publications on our shelves. As this deal with the Natural History Society will no doubt be consummated within the next few weeks and the labor involved will take the time of our librarian of the next three or four months, we will not be in position to consummate our arrangement with your society until this matter has been cleaned up and our new warehouse has been completed. We judge however, that by the first of June we will be able to enter into definite arrangement with your Association if it is agreeable to you.

Yours truly,

THE LLOYD LIBRARY.

Moved by H. H. Rusby, seconded by J. W. England, that the Association be requested to ask members to donate certain volumes of Proceedings necessary to complete the sets of proceedings owned by the Association, the numbers desired to be published in the Journal. Motion carried.

A summary of the annual report of the Treasurer was read by H. M. Whelpley.

A letter from Otto Raubenheimer proposing the name of Prof. Hermann Schelenz, of Berlin, Germany, as an honorary member of the Association was read.

J. H. Beal moved, seconded by H. M. Whelpley, that Hermann Schelenz be elected an honorary member. The motion prevailed.

The Report of the Committee on Publication was then presented by the Chairman of the Committee.

REPORT OF COMMITTEE ON PUBLICATION.

To the Members of the Council:

In accordance with the decision of the Association made at the Boston (1911) meeting, the *Journal of the American Pharmaceutical Association* has been issued since January last, along the lines directed by the Association; 3000 copies having been printed monthly. The number of reading pages for the first six issues was 656, or about 110 pages in each issue. It was originally thought that 64 pages of reading matter would be sufficient, and the approximate estimate of cost of *Journal* submitted at the Boston (1911) meeting was based on this number; but the large number of papers presented at the annual meeting and the local branches, together with the many other papers submitted to the *Journal*, made the increase of reading pages imperative.

COST OF THE JOURNAL.

The cost of the *Journal* for the first six months of 1912 (including the salary of the editor) was \$2,985.62, and the receipts from subscriptions of non-members and advertisements was \$1,631.20, making a net cost of \$1,354.42, or about \$2,700 a year.

The estimated approximate cost of the *Journal* for 1912, made at the Boston (1911) meeting by your Committee on Publication, was \$6,500, representing a cost of \$3,250 for six months.

The Year Book for 1911 has not yet been published, and if this be printed in the *Journal*, its cost (including the salary of the Reporter on the Progress of Pharmacy) will be (as shown later) about \$2,700, and this added to \$2,700 (the cost of the *Journal*) will amount to \$5,400.

The cost of the Proceedings and Report during the past three years have averaged over \$7,000 a year.

Advertisements—The returns obtained from advertisements have been much larger than we thought probable at the Boston (1911) meeting of the Association, and have made possible the increased size of the *Journal* over that originally intended. We feel that we have given an equivalent to our advertisers, and we appreciate their cordial and hearty support.

Exceeding care has been used in accepting advertisements, Rules of Censorship having been adopted and a Committee on Censorship appointed. These rules are as follows:

RULES OF CENSORSHIP.

1. All contracts for advertising are accepted subject to revocation at the discretion of the Publication Committee.
2. No advertisement will be accepted for any article or service the sale or furnishing of which is illegal in the state of publication, or in any state in which the *Journal* circulates.
3. Advertisements will not be accepted for articles belonging to the class of preparations commonly known as patent medicines, nor for any medicinal preparation advertised directly to the laity, or which is advertised in such a manner as to encourage self-medication.
4. Copy which is vulgarly or extravagantly worded, or which makes extravagant claims of therapeutic virtues will not be accepted.
5. No advertisement will be accepted which by intent or inference would result in deceiving, defrauding or misleading the reader.

Details as to advertising and advertising receipts will be furnished by the editor of the *Journal* in his report; and also details of contract made for printing the *Journal* for 1912. The best and most satisfactory bid for printing the *Journal* was that of the Stoneman Press Company, of Columbus, Ohio, to which the contract for 1912 was awarded.

COPYRIGHTING JOURNAL.

It has been decided not to copyright the *Journal*, at least for the present, unless exigencies require it; but it should be noted that some pharmaceutical journals publish our papers without credit to the *Journal*, simply stating "read at the Boston meeting of the A. Ph. A." or before such and such a local branch. That they are copied directly from the *Journal* is shown by the fact that they include all the changes made by the editor in editing the copy. It may become necessary for self-preservation to copyright the *Journal* of the A. Ph. A., as is done by the *Journal* of the A. M. A. and other journals.

REPRINTS.

Regarding reprints of articles published in the *Journal*, your Committee has adopted the following rule:

"That not to exceed one hundred copies of reprints, without cover, be supplied to authors of papers *involving research work*, provided request for the same is made before the type is

distributed, and that reprints in excess of one hundred copies, or reprints with cover shall be charged for at the rates given on page 507 of the May, 1912, Journal."

YEAR BOOK.

It will be recalled that at the Boston (1911) meeting it was decided to publish a yearly volume covering the work of the Report on the Progress of Pharmacy as published in the former Proceedings; and it was decided, also, to publish the first volume, "early in 1912," covering the period from June 30, 1910 to December 31, 1911, a period of eighteen months. This book was to contain, in addition, the Constitution and By-Laws, Geographical Roll and Alphabetical List of members, officers and committees, General Rules, etc., (as required by Chapter VII, Article IX of the By-Laws.)

It was decided by your committee to call this volume the "Year Book of the American Pharmaceutical Association," or "Year Book, A. Ph. A."

STATUS OF YEAR BOOK.

The manuscript copy of the Report on the Progress of Pharmacy (which constitutes the chief part of the Year Book), for the eighteen months ending December 31, 1911, was received by the General Secretary in June last.

In Council Letter No. 20 (Motion No. 41) Edward Kremers moved, seconded by A. H. Clark, that "the Council reconsider at the Denver (1912) Meeting the question of publishing the Report on the Progress of Pharmacy as a separate volume, and to add the money thus saved to the *Journal*, which could just as well publish the abstracts and do this at a much earlier date. The Reporter on the Progress of Pharmacy could be added to the editorial staff of the *Journal*."

This motion received a majority of affirmative votes of the Council members, and but five negative votes.

As a result of the action of the Council, the General Secretary of the Association was directed to withhold the matter for the Year Book (Report on the Progress of Pharmacy) for 1911 from the printer until the subject could be more thoroughly considered at the Denver (1912) meeting.

JOURNALIZING THE YEAR BOOK.

The suggestion has been made that the Year Book for 1911 be printed in the *Journal* for 1912 as a supplement to the regular issues. By so doing, not only could the expenses of binding and distributing, in the ordinary form, be saved, but the material would be in the hands of the members almost as quickly as if the original plan was followed. The matter would probably not amount to more than 400 or 500 pages of 8 point composition, or about 100 pages additional in *each* of the last four issues, instead of 400 pages in a separate volume. Then in 1913, the Report on the Progress of Pharmacy could be issued as supplements to the *Journal*, with the official data, etc., in the December number. The subject of journalizing the Year Book or Report on the Progress of Pharmacy has received very careful consideration by the Committee on Publication. The argument in favor of a separate yearly volume is, mainly due to sentiment, but it is a question whether the sentiment is worth what it costs. While the cessation of the annual volume would be a detriment, in some respects, the greatly enhanced value of the *Journal*, if the additional money was spent upon it, would, it is believed more than offset the loss of the annual volume.

At the Boston (1911) meeting it was estimated that the Report on the Progress of Pharmacy for 1911 would cost \$2500. Later, the salary of the Reporter on the Progress of Pharmacy was increased \$450, making the probable cost about \$3000. Of this amount the expressage and postage was estimated at \$400. The probabilities are, however, that it would be over \$500, as the expressage and postage for the Proceedings was \$503.72 in 1907, \$602.12 in 1908, and \$684.90 in 1909.

COST OF YEAR BOOK.

There is no question but what it would be more economical to print the subject matter of the Year Book in the pages of the *Journal* than to print it as a separate volume.

We have obtained quotations from printers, and on the basis of these we estimate that it would cost \$1210 for printing 2500 copies of the Year Book in *book form*, 400 pages, set in 10 point type, leaded, same paper and size of type as *Journal*, binding to be full cloth, lettered, for \$1210; and this, with a charge of \$500 for expressage and postage, and \$50 for incidentals would amount to \$1760. If the book was made 500 pages, the cost would be increased by the cost of the extra paper and press work. (This estimate does not include the salary of the Reporter on the Progress of Pharmacy.)

On the other hand, it would cost for printing the subject matter of 2500 copies of the Year Book in 10 point type, to be bound in the *Journal*, per each 16 page form, \$32, or \$800 for 400 pages, and this with \$50 for second class postage would amount to \$850.

To print 3000 copies of a 400 page book, or to print the same in the *Journal*, would cost no more for composition, but would cost slightly extra for paper, press work and postage.

To print 3000 copies of a 500 or 600 page book would cost \$2.00 more per page for composition with extra cost for paper, press work and postage.

But, in any event, there would be a saving of at least \$900, and probably over \$1000, if the subject of the Year Book was published in the *Journal* instead of being published as a separate volume.

PUBLICATION OF YEAR BOOK.

Your Committee on Publication therefore recommends (1) that the "Year Book," so-called, be published with the *Journal*, either in 10 point or 8 point composition, as deemed best by the Committee on Publication; (2) that the Report on the Progress of Pharmacy covering the period from June 30, 1910 to December 31, 1911, be published in the last four issues of the *Journal* for 1912, and (3) that the December (1912) issue of the *Journal* contain the official data and index.

NATIONAL FORMULARY.

It is very important that the subject matter of this book be given the most careful consideration by the members of the Committee on National Formulary. The latter are framing legal standards, and should not call their labors completed until they have satisfied themselves that every formula submitted is entirely practicable and that the book will meet every legal requirement. This means delay, but it is believed that it will be possible to publish the National Formulary at a reasonably early date. In fact, it seems to your Committee that it would be better to delay its publication until the time arrives for the publication of the ninth revision of the U. S. Pharmacopoeia.

With reference to the printing and the sale of the National Formulary it would pay the Association to have this work carried on by some publishing house, somewhat after the manner in which the U. S. P. is handled. It would save detail in the handling of accounts to have the printing of the book and the agency for its sale in the same hands, but it would be easier to keep track of sales if one firm manufactures and the other sells. Each copy of the book issued should have a label with serial number.

USE OF TEXT OF N. F.

In January, 1912 the *Druggists Circular* made application to the Council for permission "to publish a commentary on the various formulas contained in the work of N. F., somewhat as the authors of the dispensatories have published comments on the text of the Pharmacopoeia and to quote extensively from the book." The request caused extended discussion in the Council, and was referred to the Committee on Publication. The latter felt, however, that the subject was of such importance, in fixing a precedent, that it should be discussed by the Council in actual session at the Denver (1912) meeting, and it was so decided.

In this connection, it may be stated that a similar question has been considered by the "Committee on the Use of U. S. P. Text" with reference to the use of the text of the Pharmacopoeia, and report was made to the Board of Trustees under date of July 17, 1912.

Through the courtesy of Dr. H. M. Whelpley, we have been furnished with a copy of this report.

The recommendations of this committee were:

(1) That medical and pharmaceutical journals and periodical publications be permitted to publish such portions of the text as may be necessary for proper comment without the payment of compensation, provided such publication of the text shall not be such that a series of the periodical could be used in place of the Pharmacopoeia itself.

(2) That where portions only of the text are used as (a) in works which make a literal reproduction of the titles and botanical description but do not reproduce formulas and other data; (b) books which give one or only a few of the formulas in full; (c) books which do not reproduce the text, except the titles and the more important data, the rates of compensation to be demanded shall be the same as those established for the Eighth Revision.

(3) That the determination of the class to which such books belong and the fixing of the amount to be charged therefor shall be determined by the Chairman and Secretary of the Board from samples of the proposed publication, submitted by the author or publisher.

(4) That in every case where permission is granted to make use of any portion of the text of the Pharmacopoeia, the reverse of the title page of such publication shall bear an acknowledgment that such permission has been received from the U. S. P. Board of Trustees, and that neither the Board of Trustees or U. S. P. Convention is responsible for any error in the transcription of formulae or other data.

(5) Whether any author shall be permitted to republish the text of the Pharmacopoeia in its entirety, as in the Dispensatories, and the amount of compensation to be demanded for such privilege if granted, being a subject of vital importance, is hereby referred back to the whole Board of Trustees for full discussion and determination."

It seems to your Committee on Publication that the conditions that should obtain in the use of the text of the National Formulary should be similar to those directed for the use of the text of the U. S. Pharmacopoeia, and the committee so recommends.

With reference to the use of the text of the National Formulary in its entirety, your committee would like to have the subject discussed and determined by the Council.

Respectfully submitted,

J. W. ENGLAND,
Chairman of Committee on Publication.

After some discussion the foregoing report was, on motion, ordered received, and the portions relating to the publication of the Year Book and to the National Formulary were made a special order of business for the next meeting of the Council.

Charles Caspari, Jr. expressed his appreciation of the resolutions which had been sent him by the members of the Council upon his services to the Association as General Secretary.

J. H. Beal presented an abstract of his report as General Secretary and as Editor of the Journal, and the report was referred without discussion to the Association in General Session.

On motion of J. H. Beal, seconded by H. M. Whelpley, it was moved that the Council meet each morning of the convention week at 9 a. m.

Adjourned until Tuesday, August 20, 1912.

J. W. ENGAND, Secretary.

(Fourth Session of the Council.)

The fourth session of the Council for 1911-12 was held August 20, 1912, at 9 A. M., at the Brown Palace Hotel, Denver, Chairman Eberle presiding:

Present: Messrs. Beal, Asher, Eberle, Wallace, Godding, Clark, Caspari, Koch, Whelpley, Berger, Remington, LaPierre, Richtmann and England.

The minutes of the previous meeting were read and approved.

Richard Swartz was granted permission by the Council to exhibit drug cabinets in the registration room.

On motion of J. H. Beal, seconded by J. W. England, permission was granted to the pharmaceutical press to print the addresses of the officers of the Association and reports of the Association's Section and Council meetings without waiting for their prior appearance in the *Journal*.

After a general discussion, on motion of J. P. Remington, seconded by Philip Asher, it was decided to publish the Report on the Progress of Pharmacy covering the period from June 30, 1910, to December 31, 1911, with the official data, etc., as a separate volume or Proceedings (Volume 59, 1911), and also, that future Reports on the Progress of Pharmacy be published monthly in the *Journal*, beginning January, 1913.

The subject of the use of the text of the National Formulary by periodicals and text books was next considered.

The Council decided that the publication of the entire book of the National Formulary with or without comments should be prohibited and, also that the Council permit a *partial* reproduction of the text of the N. F. by periodicals and text books, such as could not be used as a substitute for the National Formulary, under a compensation to the Association proportioned to the amount of text to be used; the amount to be determined in each case by the Council.

On motion, Hugh Craig was made Acting Secretary of the Section on Commercial Interests, and F. P. Stroup was made Acting Secretary of the Scientific Section.

The Report of the Committee on Credentials was received and approved.

Applications from Nos. 380 to 393 inclusive were received and favorably acted upon.

- No. 380. Ovid B. Lewark, 2491 Sheridan Blvd., Denver, Col.
- No. 381. Charles S. Woods, M. D., Eli Lilly and Co., Indianapolis, Ind.
- No. 382. Hugh Bennett Secheverell, 3658 Navajo St., Denver, Col.
- No. 383. Fred Abram Brink, 106 N. 4th St., Grand Island, Neb.
- No. 384. William D. Dick, Lawrence, Kansas.
- No. 385. John J. Ackerman, Hendley, Neb.
- No. 386. J. George Bunch, Beloit, Kansas.
- No. 387. Wilbur G. Myers, 1680 Steele St., Denver, Col.
- No. 388. Elbert O. Kagy, 3931 6th Ave., Des Moines, Iowa.
- No. 389. Miss Anna Babette Schlumberger, Denison, Iowa.
- No. 390. Arthur Earl Stevenson, 1539 Vermont St., Lawrence, Kansas.
- No. 391. Hugh Cornelius Muldoon, Massachusetts College of Pharmacy, Boston, Mass.
- No. 392. Kenneth-Cambus Robbins, 500 East First St., Fort Worth, Texas.
- No. 393. E. D. Clarkson, Refugio, Texas.

A letter was read from W. R. White, of Nashville, Tenn., regretting his inability to be present at the Denver meeting.

Adjourned until Wednesday, August 21, 1912.

J. W. ENGLAND, Secretary.

(Fifth Session of the Council.)

The fifth session of the Council for 1911-12 was held August 21, 1912, at 9 A. M., at the Brown Palace Hotel, Denver, Chairman Eberle presiding.

Present: Messrs. Eberle, Asher, Remington, England, Beal, Whelpley, Wallace, Godding and Berger.

The minutes of previous meeting were read and approved.

The report of the Committee on Standards for Unofficial Drugs. Chemical Products and Pharmaceutical Preparations was presented, and on motion of J. H. Beal, seconded by J. P. Remington, it was referred to the Joint Session of the Committees on U. S. P. and N. F.

On motion of J. H. Beal, seconded by J. G. Godding, L. D. Havenhill was made Acting Chairman of the Joint Session of the Committees on U. S. P. and N. F., and E. F. Cook, Acting Secretary; and F. T. Gordon was made acting Secretary of the Historical Section.

The report of the Committee on Drug Reform was presented to the Council and, on motion of Philip Asher, seconded by J. H. Beal, it was referred to the general session of the Association.

President Godding stated he had received a personal communication from the family of S. A. D. Sheppard, in which the statement was made that "Mr. Sheppard would like you to give a warm personal greeting to his many friends and say that he is with them in interest and spirit as heartily as ever, although physically unable to meet them, and he trusts that the meeting at Denver will be one of the most satisfactory in the history of the A. Ph. A. We look back with great pleasure to our last meeting there and remember the cordial reception and entertainment given us."

H. M. Whelpley moved, seconded by J. G. Godding, that the Secretary of the Council send Mr. Sheppard the most hearty greetings and best wishes of the A. Ph. A., of which he was for many years a most active member, and Treasurer of the Association.

The report of the committee on simplifying the work of the general sessions of the annual meeting, Edward Kremers Chairman, was received and referred to the Committee on Revision of the Constitution and By-Laws.

J. H. Beal read a communication from the National Association of Pharmacologists, asking the American Pharmaceutical Association to elect representatives to a national committee consisting of the principal officers of the A. Ph. A., N. A. R. D. and the National Association of Boards of Pharmacy to simplify the State Pharmacy Laws, and submitting resolutions for the founding of a National Apothecaries' Home.

On motion of J. H. Beal, seconded by H. M. Whelpley, the communication was received and ordered filed.

The suggestion was made by J. H. Beal that this communication and the previous one should be considered by the House of Delegates as soon as organized. This was agreed to.

On motion of J. G. Godding, seconded by J. C. Wallace, the traveling expenses of the General Secretary in his visits to the Local Branches and in traveling from Scio to Columbus and return, in the interest of the Journal, up to the present time, be paid by the Association.

The motion was approved, the appropriation necessary being subject to the approval of the Committee on Finance.

A supplementary report of the Committee on Credentials was presented and approved.

Adjourned.

J. W. ENGLAND, Secretary.

(Sixth Session of the Council.)

The sixth session of the Council for 1911-12 was held August 22, 1912, at 9 A. M., at the Brown Palace Hotel, Denver, Chairman Eberle presiding.

Present: Messrs. Eberle, Asher, Remington, England, Beal, Whelpley, Godding, Clark and Koch.

The minutes of the preceding meeting were read and approved.

The following additions were directed to be made to the list of accredited delegates submitted by the Committee on Credentials:

Miss Kitty W. Harbord, Salem, Oregon; G. Bachman, John Neilson and W. A. Frost, Minnesota; D. F. Jones, of Watertown, South Dakota; G. C. Kendal, Mississippi; C. E. Mollet, Bozeman, Montana; G. D. Timmons, Valparaiso, Ind.; E. W. Linton, Valparaiso, Ind.; L. D. Needham, Fort Worth, Texas; and Hugh Craig, New York, N. Y.

The Committee on Finance reported its approval of an appropriation to pay traveling expenses of General Secretary for Branch and Journal work.

Applications from No. 394 to 401 inclusive were presented, and favorably acted upon. The list was:

- No. 394. Walter J. Treadon, 2268 East 105th St., Cleveland, Ohio.
- No. 395. Mrs. Emily K. Hilton, Socorro, New Mexico.
- No. 396. Holton Longnecker, Rollinsville, Col.
- No. 397. Chas. P. Bauman, 216 Main St., Sterling, Col.
- No. 398. Jose Macias y Diaz, F No. 93A, Vedado, Habana, Cuba.
- No. 399. Maria Gonzalez y Llerena, Jesus del Monte 518, Habana, Cuba.
- No. 400. Joyre L. Wunez, Reina 115, Habana, Cuba.
- No. 401. Emil P. Ferte, 1107 Augusta Ave., Spokane, Wash.

J. H. Beal presented amendment to Chapter IV of the Council By-Laws as follows: "Amend the by-laws of the Council by striking out the whole of Chapter IV relating to the Council Committee on Membership and changing the numbers of the remaining chapters of the by-laws; also by striking out all reference to said committee in other sections of the by-laws." The amendment was approved.

Dr. H. M. Whelpley submitted the following amendment to Chapter VIII, Article III of the by-laws of the Association:

"Amend Chapter VIII, Article III of by-laws of Association by striking out the words "three successive years" and substituting therefor "sixteen successive months." The amendment was approved.

J. H. Beal presented an amendment to Chapter VII, Article II, as follows:

"Amend Chapter VII, Article II, by striking out the word "October" and inserting in lieu thereof the word "June." The amendment was agreed to.

The Secretary of the Council was directed to send to C. Lewis Diehl the greetings and best wishes of the Association.

J. C. Wallace made a verbal report upon the proposed conference of pharmaceutical organizations upon pharmaceutical legislation, and recommended that such a conference be held at some convenient, central place.

J. H. Beal moved, seconded by J. C. Wallace, (1) that the Association hereby calls a conference to be made up of delegates from the various national pharmaceutical associations to consider the subject of legislation, both state and national, in its relation to pharmacy.

(2) That the General Secretary be instructed to send invitations to each of the national associations requesting the appointment of delegates to such conference.

(3) That such conference shall be held at Washington, D. C., some time prior to Jan. 1, 1913.

(4) That the temporary Chairman of the Conference shall be appointed by the President of the American Pharmaceutical Association, and the General Secretary shall act as Temporary Secretary of the same.

(5) That such conference shall elect its own permanent officers, and after its organization shall be considered as representing all of the associations sending delegates to the same, and shall not be considered as being conducted under the auspices of any particular organization.

In presenting the resolutions Mr. Beal stated that they had been prepared hurriedly and asked, in case of their adoption, that he be permitted to make necessary changes in their verbiage but not changing the general purport of the resolutions.

The permission was granted, and the resolutions were adopted.

Applications No. 402, for John W. Webb, Main St., Stuttgart, Ark., was presented and favorably acted upon.

J. H. Beal moved, seconded by H. M. Whelpley, that the Association place on record the fact that it does not recognize the so-called souvenir program distributed at the present meeting as official, and that it reiterates the standing rule

that no advertising in the official program at the annual meeting shall be permitted. Further, that no program containing advertisements shall be distributed at the annual meeting of the association. Carried.

On motion, the Council for 1911-12 adjourned sine die.

J. W. ENGLAND, Secretary.

PROCEEDINGS OF THE COUNCIL FOR 1912-13.

(First Session of the New Council.)

The first session of the Council for 1912-13 was held August 22, 1912, at 9:30 A. M., at the Brown Palace Hotel, Denver.

Present: Messrs. Eberle, England, Whelpley, Godbold, Remington, Pease, Wallace, Asher, Godding and Beal.

The meeting was called to order by H. M. Whelpley, and E. G. Eberle was made temporary Chairman.

On motion of J. P. Remington, seconded by F. C. Godbold, E. G. Eberle was made Chairman, H. M. Whelpley putting the motion.

On motion of H. M. Whelpley, seconded by J. W. England, F. C. Godbold was elected Vice-Chairman.

J. P. Remington moved, seconded by J. G. Godding, that J. W. England be made Secretary, which was done.

A committee on nominations for the committees of the Council, consisting of E. G. Eberle and J. W. England, was appointed.

On motion of H. M. Whelpley, seconded by J. H. Beal, J. O. Burge was nominated at Local Secretary for the 1913 meeting. He was elected.

J. H. Beal moved, seconded by H. M. Whelpley, that the following appropriations be made:

- (1) \$200 for the Special Membership Committee.
- (2) \$150 to cover deficiency in appropriation for Stenographers.
- (3) \$17.65 to cover deficiency in appropriation for Committee on National Legislation.

These appropriations having received the approval of the Finance Committee, were voted by the Council.

Adjourned until August 24, 1912, at 9 A. M.

J. W. ENGLAND, Secretary.

(Second Session of the New Council.)

The second session of the Council for 1912-13 was held August 24, 1912, at 9:30 A. M., at the Brown Palace Hotel, Denver, F. C. Godbold presiding in place of Chairman Eberle, who was unable to be present.

Present: Messrs. Koch, Whelpley, Day, Clark, Godbold, Asher, England, Godding, Pease, Remington, Ford, Packard and Beal.

The minutes of preceding meetings were read and approved.

A petition was presented for the establishment of a Women's Section of the American Pharmaceutical Association, as follows:

DENVER, COLORADO, August 22, 1912.

To the Chairman and Members of the Council:

The undersigned respectfully request your approval of the establishment of a Women's Section to be known as The Women's Section of the American Pharmaceutical Association, in the nature of an auxiliary, to hold its annual meeting at the same time and place as the annual meeting of the American Pharmaceutical Association.

In view of the late period of our request, it is our desire that the Council name the officers and committees for the temporary organization, in order that the new section, if authorized, may be able to start to work promptly at the beginning of the next annual meeting of the Association.

Clarissa May Roehr.	Mrs. H. M. Whelpley.
Della Livingstone.	Mrs. J. W. England.
Hannah B. Seymour.	Mrs. J. G. Godding.
Anna G. Bagley.	Mrs. J. H. Beal.
Zada M. Cooper.	Mrs. Charles Holzhauer.

J. H. Beal moved, seconded by Philip Asher, that the petition be granted, and that the President of the Association appoint the temporary officers of the Section for 1912-13. Motion carried.

H. M. Whelpley, seconded by C. A. Mayo, nominated Thomas F. Main as Honorary President of the Association. He was elected.

The Report of the Historian addressed to the members of the Historical Section and referred by the latter to the Council, was received and discussed. (See Minutes of the Section on Historical Interests.)

On motion of C. A. Mayo, seconded by H. M. Whelpley, it was moved that the Council accepts Edward Kremers resignation with sincere regret and recommends to the Association the passage of a resolution of appreciation to Edward Kremers for his years of valuable service as Historian. Motion carried.

J. H. Beal moved, seconded by Philip Asher that Caswell A. Mayo be named as Historian to succeed Edward Kremers. He was elected.

H. M. Whelpley moved, seconded by C. A. Mayo, that if it should become necessary to remove the historical matter of the Association now stored in the Historical Building of the State of Wisconsin, that it be sent to the General Secretary to be stored with the other property of the Association. Carried.

Philip Asher moved, seconded by W. B. Day, that the Register used at the present meeting of the Association by the Local Committee on Arrangements, be made part of and bound with the Official Register of the Association. Carried.

Chairman England, of the Committee on Publication, made the following report upon the subject of the Lloyd Library offer:

To the Members of the Council, A. Ph. A.

GENTLEMEN: With reference to the Lloyd Library offer it will be noted that all publications received in exchange for the publications of our Association are to become, ultimately, the property of the Lloyd Library. Is this wise? If we ever intend to have a permanent library, it would seem better to keep control of all the periodicals and text books received.

If a sales-agent is chosen to market our National Formulary, as we have recommended to the Council, in our annual report, he would probably be willing to handle the extra business of sending out the other publications of the Association, for a nominal charge.

The offer of the Lloyd Library to loan exchanges can doubtless be duplicated elsewhere. Possibly, the St. Louis Library, or the College of Physicians of Philadelphia, or the College of Physicians and Surgeons of New York might be willing to cooperate with the A. Ph. A., in this respect.

Your Committee on Publication suggests that this matter be continued in the hands of the Committee on Publication with power to act.

In addition, whatever is done, the value of the publications stored should be protected by proper insurance.

J. W. ENGLAND,
Chairman Committee on Publication.

On motion of C. A. Mayo, seconded by W. B. Day, the report was adopted.

H. M. Whelpley moved, seconded by F. C. Godbold, that Local Secretary Burge be made Chairman of the Local Committee on Arrangements, with power to select the members of the Local Committee on Arrangements.

The minutes of the meetings of the House of Delegates were presented to the Council.

The minutes were, as follows:

MINUTES OF THE HOUSE OF DELEGATES.

(First Session.)

The House of Delegates of the American Pharmaceutical Association was formally organized August 21, 1912, J. W. England acting as temporary chairman and W. C. Anderson as temporary secretary.

Secretary Anderson called the roll of delegates. The following responded:

W. A. Puckner, Chicago.
Wm. C. Anderson, New York.
Chas. M. Woodruff, Detroit.
Clarissa M. Roehr, San Francisco.
Ernest Berger, Tampa, Fla.
G. Henry Sohrbeck, Moline, Ill.
Gus Lindvall, Moline, Ill.
Zada M. Cooper, Iowa City.
W. J. Teeters, Iowa City.
L. E. Sayre, Lawrence, Kan.
H. M. Whelpley, St. Louis, Mo.
Chas. R. Sherman, Omaha, Neb.
R. A. Lyman, Lincoln, Neb.
Geo. M. Andrews, Woodstown, N. J.
Caswell A. Mayo, New York, N. Y.
James H. Beal, Scio, Ohio.
W. A. McCutchen, Luther, Oklahoma.
Geo. H. Watt, Pullman, Wash.
Philip Asher, New Orleans, La.
J. G. Godding, Boston, Mass.
E. H. LaPierre, Boston.
John C. Wallace, New Castle, Pa.
E. G. Eberle, Dallas, Tex.
Theodore J. Bradley, Boston, Mass.
H. V. Army, New York, N. Y.
Charles W. Patterson, Chicago, Ill.
B. L. Murray, Rahway, N. J.
Otto F. Claus, St. Louis, Mo.
William S. Richardson, Washington, D. C.
Clyde M. Snow, Chicago, Ill.

The following resolutions providing for the seating of delegates as approved by the Council were introduced by James H. Beal:

"Resolved, That we recognize the report of the Committee on Credentials approved by the Council as the roll of members of the present House of Delegates.

"Resolved, That each delegate present be entitled to one vote on each question and to represent one institution only."

The resolutions were adopted without debate.

On motion, the following delegates were added to the original list:

D. F. Jones, Watertown, S. D.
G. C. Kendal, Mississippi.
C. E. F. Mollet, Bozeman, Mont.
G. D. Timmons, Valparaiso, Ind.
A. W. Linton, Valparaiso, Ind.
R. H. Needham, Fort Worth, Tex.

Motion made by James H. Beal that delegates of local branches of the Association be recognized. Carried.

Hugh Craig was duly recognized as a delegate from the New York Branch.

James H. Beal proposed the following order of business:

1. Calling roll of delegates.
2. Election and installation of officers.
3. Appointment of Committee on Resolutions.
4. Reading communications from the Association and the Council.
5. Calling roll of delegations for reports, resolutions and communications.
6. Appointment of Committee on By-Laws.
7. Miscellaneous business.
8. Adjournment to a time certain.

On motion, the above order of business was adopted.

The House of Delegates then proceeded to elect permanent officers. The following officers were elected:

W. C. Anderson, Chairman, Brooklyn, N. Y.
 Clyde M. Snow, First Vice-Chairman, Chicago, Ill.
 W. S. Richardson, Second Vice-Chairman, Washington, D. C.
 Clarissa M. Roehr, Secretary, San Francisco, Cal.

The permanent officers were duly installed, John C. Wallace, of New Castle, Pa., introducing them.

The next order of business was the appointment of the Committee on Resolutions.

J. W. England suggested a committee of three, and a motion was made by James H. Beal, seconded by J. W. England, that three members be appointed by the chair to serve as the Committee on Resolutions. Carried.

The following were named as the committee: T. J. Bradley, O. F. Claus and D. F. Jones.

A communication regarding the unification of the State Pharmacy Laws and other subjects was received from P. A. Mandabach, Secretary of the National Association of Pharmacologists, and was read.

Resolutions in this communication providing for the establishment of the Apothecaries National Home were read by the Secretary.

On motion of J. H. Beal, seconded by J. W. England, the resolutions were referred to the Committee on Resolutions.

C. A. Mayo spoke against establishing a precedent of referring all resolutions to the Committee on Resolutions. The motion so referred was then amended by J. H. Beal to read: That the resolutions be referred to the Committee on Resolutions with the recommendation of this body for adoption. Carried.

Hugh Craig, of New York, offered the following resolution:

"Be it resolved, That the House of Delegates of the 1912 meeting of the American Pharmaceutical Association request the Council to extend to the Local Branches of the Association the right to send delegates to the House of Delegates in the manner provided for in the resolution creating this body."

Moved and carried that above resolution be referred to the Committee on Resolutions.

Moved by H. M. Whelpley, seconded by J. G. Gooding, that the House of Delegates instruct its Secretary to send a letter of greeting to the ex-presidents of the A. Ph. A. who are not in attendance at this meeting, and express the hope that they will be present at the Nashville meeting in 1913 and participate in the meetings of the House of Delegates.

Moved and seconded that these resolutions be referred to the Committee on Resolutions. Carried.

The report of a committee to suggest ways and means of simplifying the work of the general sessions of the Association was considered.

On motion, the report was referred to the Committee on Resolutions.

W. Bruce Philip urged the cooperation of the American Pharmaceutical Association with county pharmaceutical organizations, and offered a resolution that the American Pharmaceutical Association endeavor to frame a plan to get in touch with county organizations.

Moved and carried that the resolution be favorably referred to Committee on Resolutions.

J. H. Beal offered as a resolution certain propositions submitted by W. Bodemann, relating to the Committee on Transportation. On motion, the resolutions were referred to the Committee on Resolutions.

The next order of business was the appointment of the Committee on By-Laws. A motion was made by J. W. England that a committee of three be appointed by the chair. Carried.

Clyde M. Snow, J. G. Gooding and W. Bruce Philip were appointed on the committee.

There being no further business, the meeting adjourned to meet August 22, 1912.

CLARISSA M. ROEHR, Secretary.

Second Session of the House of Delegates.

The second session of the House of Delegates was held August 22, 1912, at 3:20 p. m., W. C. Anderson presiding.

The minutes of the previous meeting were read and approved.

The following were present:

W. A. Puckner, Chicago, Ill.
 Frank H. Freericks, Cincinnati, Ohio.
 Wm. C. Anderson, Brooklyn, N. Y.
 J. P. Remington, Philadelphia, Pa.
 Clarissa M. Roeher, San Francisco.
 W. Bruce Philip, Oakland, Cal.
 C. O. Ballou, Boise, Idaho.
 Zada M. Cooper, Iowa City, Ia.
 W. J. Teeters, Iowa City, Ia.
 L. E. Sayre, Lawrence, Kan.
 L. A. Brown, Lexington, Ky.
 H. M. Whelpley, St. Louis, Mo.
 Chas. R. Sherman, Omaha, Neb.
 Caswell A. Mayo, New York, N. Y.
 Philip Asher, New Orleans, La.
 F. C. Godbold, Boston, Mass.
 Louis Emanuel, Pittsburgh, Pa.
 Burton Cassidy, West Terre Haute, Ind.
 Kitty W. Harbord, Salem, Oregon.
 Chas. E. Vanderkleed, Philadelphia, Pa.
 H. V. Arny, New York, N. Y.
 John C. Wallace, New Castle, Pa.
 Otto F. Claus, St. Louis, Mo.
 Clyde M. Snow, Chicago, Ill.
 Jose P. Alacan, Havana, Cuba.
 J. K. Lilly, Guthrie, Oklahoma.
 T. A. Miller, Richmond, Va.
 John Cully, Salt Lake City, Utah.
 Charles Gietner, St. Louis, Mo.
 John Nielson, Ortonville, Minn.
 G. Bachman, Minneapolis, Minn.
 H. Lionel Meredith, Hagerstown, Md.
 B. L. Murray, New York, N. Y.

John C. Wallace was delegated to invite the Section on Commercial Interests to join in the meeting. Mr. Wallace reported that this section would attend the meeting.

The National Association of Boards of Pharmacy adjourned to attend this meeting. The members were accorded the privileges of the floor by President Anderson.

The report of the Committee on By-Laws, presented by Chairman Clyde M. Snow, was amended as follows:

CHAPTER II, ARTICLE I.

Amended to read: The membership of the House of Delegates shall consist of three regularly elected or appointed delegates from local branches of the A. Ph. A., State and Local societies, etc.

CHAPTER II. ARTICLE III.

Voting: Each delegate shall be entitled to one vote. No delegate shall act as the proxy of another delegate who has not been seated, etc.

ARTICLE III.

Duties of the Secretary: Last line amended to read "and shall give notice of the time and place of each meeting of the House of Delegates."

CHAPTER VII. ARTICLE I.

Amended to read: Resolutions—All resolutions shall receive not less than a majority of votes of those present for adoption.

Moved by H. M. Whelpley, and seconded by John C. Wallace, that the By-Laws as amended be adopted.

The by-laws as finally adopted and afterward approved by the Council were as follows:

BY-LAWS OF THE HOUSE OF DELEGATES OF THE AMERICAN PHARMACEUTICAL ASSOCIATION.

CHAPTER I.

Article 1—Functions. The House of Delegates shall have and exercise the following functions:

A. To receive and consider the reports of delegates from the bodies which they represent in the House of Delegates.

B. Consider and report upon such resolutions, and upon such other subjects as may be referred to the House of Delegates by the Council or by the Association in general session, or by the various Sections.

C. Make a final report of the business transacted by the House of Delegates to the final session of the outgoing Council at each annual meeting.

D. It shall have the authority to adopt all rules and regulations necessary for the proper conduct of its business and not inconsistent with the Constitution and By-Laws of the Association and the Council.

CHAPTER II.

Article 1—Representation. The membership of the House of Delegates shall consist of three regularly elected or appointed delegates from the Local Branches of the American Pharmaceutical Association, State and Local Societies, Colleges and Schools of Pharmacy and delegates from the National Association of Retail Druggists, National Wholesale Druggists Association, American Medical Association, National Association of Boards of Pharmacy, Women's Organization of the National Association of Retail Druggists, National Association of Manufacturers of Medicinal Products, American Chemical Society, Association of National and State Food and Dairy Departments, Association of Official Agricultural Chemists, and from the departments of the Army, Navy and Public Health and Marine Hospital Service, the American Association of Drug Clerks, the credentials of whom shall be approved by the Council; together with five members of the Council, appointed by the Chairman of the Council. The President, President-elect, Treasurer, General Secretary and the Chairman and Secretary of the Council shall be members ex-officio.

ARTICLE II.

Term of Service. The elected or appointed delegates shall hold office for one year, or until the credentials of their successors shall have been approved by the Council.

CHAPTER III.

Article 1—Organization. The first session of the House of Delegates at each annual meeting shall be called to order by the Chairman, or one of the Vice-Chairmen, or the Secretary of the preceding House; or, in the absence of all of those, by the Secretary of the Council.

Article 11—Voting. Each delegate shall be entitled to one vote. No delegate shall act as proxy of another delegate who has not been seated, nor as delegate for more than one association, organization, or institution.

Article 111—Privileges. Any member of the American Pharmaceutical Association may attend any session of the House of Delegates and shall have the privilege of the floor.

CHAPTER IV.

Article 1—Officers. The officers of the House of Delegates shall consist of a Chairman, two Vice Chairmen and a Secretary, who shall be elected annually by ballot by the House of Delegates.

Article 11—Duties of Chairman and Vice Chairmen. The Chairman shall preside at all meetings of the House of Delegates; in his absence, or on account of inability from any cause, the First Vice Chairman; or, in his absence, the Second Vice Chairman; or, in the absence of the three, a Chairman pro tempore shall perform the duties of the Chairman.

Article 111—Duties of Secretary. The Secretary shall keep fair and correct minutes of the proceedings of the meetings and carefully preserve all reports and papers of every description received by the House of Delegates, and deliver the same to the Secretary of the Council at the annual meeting. The Secretary shall read all papers received for the purpose; shall call and record the ayes and nays whenever they are required to be called; shall notify the Chairman of every special committee of his appointment, giving a list of his colleagues, and stating the business on which the committee is to act, and shall give notice of the time and place of each meeting of the House of Delegates.

CHAPTER V.

Article 1—Sessions. The House of Delegates shall hold at least one session during the annual meeting of the Association at an hour previously determined by the Council and such additional sessions as may be necessary for the transaction of its business.

CHAPTER VI.

Article 1—The Committee on Resolutions. The Chairman shall appoint a Committee on Resolutions consisting of five members, to which shall be referred all resolutions and which shall report to the House the results of its deliberations not later than the last session of the House.

Article 11—Special Committees. The Chairman shall appoint such Special Committees as may be directed by the House.

CHAPTER VII.

Article 1—Resolutions. All resolutions shall receive a majority of affirmative votes of those present for adoption.

Article 11—Amendments. Every proposition to amend these By-Laws shall be submitted in writing at one session of the House and may be balloted upon at the next session, when upon receiving the affirmative vote of three-fourths of the members present it shall become a part of the By-Laws.

CHAPTER VIII.

Order of Business.

The following shall be the Order of Business:

1. Calling Roll of Delegates whose credentials have been approved by the Council.
2. Election and Installation of Officers.
3. Appointment of Committee on Resolutions.
4. Reading of communications from the Association, Sections and Council.
5. Calling Roll of Delegations for reports, resolutions and communications, all of which shall be in writing.
6. Miscellaneous business.
7. Adjournment to a time certain.

The report of the Committee on Resolutions was presented as follows, and adopted:

Report of Committee on Resolutions.

The sub-committee on resolutions appointed at the meeting of the House held yesterday respectfully recommends the adoption of the following resolutions:

I. Resolved, that the Council be requested to include the Local Branch of the A. Ph. A., in the list of bodies represented by delegates to the convention given in paragraph 2 of the resolution creating the House of Delegates.

II. Resolved, that the Secretary of the House of Delegates be instructed to send a letter of greeting to the living ex-presidents of the A. Ph. A. who are not in attendance at Denver expressing the hope that they will be present at the Nashville (1913) meeting and participate in the work of the House of Delegates.

III. Resolved, that the Council be requested to refer the report of the committee to suggest ways and means to simplify the work of the general sessions of the Association to the Committee on Revision of the Constitution and By-Laws.

IV. Resolved, that the House of Delegates fully believes that the American Pharmaceutical Association should get into closer touch with local pharmaceutical associations, and that this motion be referred for consideration by the Committee on Revision of the Constitution and By-Laws.

V. Resolved, that the House of Delegates recommend to the Council that the following be the definition of adulteration approved by the American Pharmaceutical Association:

"A substance is adulterated when it differs in any respect from the properties, strength or quality which have been defined by some competent authority."

VI. Resolved, that the suggestions from W. Bodemann concerning the personnel and work of the Committee on Transportation be referred to the Council for consideration in selecting the Chairman and members of this committee.

VII. The committee can see the benefits of a home for indigent druggists and drug clerks as proposed by the National Association of Pharmacologists, if such can be properly established and maintained, but we do not believe that the A. Ph. A. should become partially responsible for such an institution by appointing any members to its Board of Trustees, therefore we recommend that no appointment of members to such a board be made at this time.

VIII. As the question of the unification of the pharmacy laws of the various states has been, and is now being considered by the National Association of Boards of Pharmacy; therefore the A. Ph. A. should not initiate another such movement, but we recommend that the Association continue to cooperate in this work.

Signed

THEODORE J. BRADLEY,
OTTO F. CLAUS,
D. F. JONES.

On motion of H. M. Whelpley, seconded by J. W. England, a vote of thanks was given to the Committee on By-Laws and Resolutions.

Meeting adjourned until August 23, 1912, at 8:30 p. m.

CLARISSA M. ROEHR, Secretary.

Third Session of the House of Delegates.

The third meeting of the House of Delegates was held Friday evening, August 23, 1912, at 8:30 p. m., W. C. Anderson presiding.

On motion, the reading of the minutes of the previous meeting was dispensed with.

The following delegates were present:

Wm. C. Anderson, New York, N. Y.
J. P. Remington, Philadelphia, Pa.
Clarissa M. Roehr, San Francisco, Cal.
W. Bruce Philip, Oakland, Cal.
Zada M. Cooper, Iowa, City.

H. M. Whelpley, St. Louis.
 Caswell A. Mayo, New York.
 R. S. Lehman, New York.
 E. G. Eberle, Dallas, Texas.
 Theodore J. Bradley, Boston, Mass.
 Clyde M. Snow, Chicago, Ill.
 Hugh Craig, New York, N. Y.
 H. Shuptrine, Savannah, Ga.

Resolutions referred to this body by the Council were presented. On motion the resolutions were referred to the Committee on Resolutions.

Theodore J. Bradley, Chairman of the Committee on Resolutions, presented the committee's report on these resolutions referred by the Council. The Committee recommended their adoption, but recommended reconsideration by the Council before final adoption. The report stated further that these resolutions are in line with the conclusions of our Committee on Legislation, and without doubt represent the opinion of the Association.

The Bodemann resolutions appeared unnecessary to the committee, as the distributor of harmful samples is held accountable for his acts. The committee suggested that this communication be referred back to the Council without recommendation.

The following resolutions were recommended by the Committee on Resolutions for adoption:

REPORT OF COMMITTEE ON RESOLUTIONS.

(1) *Resolved*, That Alpin be added to the list of drugs recommended by our conference committee to be specified upon the label of preparations containing the same.

(2) *Resolved*, That we disapprove of and use our efforts to defeat the Owen Bill in its present form.

(3) *Resolved*, That where physicians are permitted to dispense that the same laws should regulate the practice as does the law concerning the pharmacist, especially in reference to narcotic and habit-forming drugs.

(4) *Resolved*, That our Committee on Legislation be instructed to carefully watch all tariff legislation and conserve the interests of the retail drug trade in such manner as to them may seem most proper and effective.

(5) *Resolved*, That we heartily endorse and approve Senate Bill No. 7017 as introduced by Senator Clapp, of Minnesota, and that a copy of this resolution be sent to Senator Clapp.

(6) *Resolved*, That we heartily endorse the changes in the Richardson Bill recommended at the Washington conference of our own and other legislative committees, as they appear in the record of the hearings of the conference, and as so changed we advocate the enactment thereof, as a measure which will be of immense benefit to the welfare of the public.

(7) *Resolved*, That we do not approve the Harrison Bill in its present form.

(8) *Resolved*, That this Association favors an amendment to the National Food and Drugs Act that will protect the public against unwarranted claims of nostrums and will provide that the manufacturing of medicinal preparations be in the hands of licensed pharmacists.

(9) *Resolved*, That this Association favors interstate anti-narcotic legislation that will effectually prohibit all illegitimate traffic in narcotics and habit-forming drugs and confine their sales to proper channels, and their uses to strictly medicinal purposes.

(10) *Resolved*, That Section 1 of Regulation 7 of the National Food and Drugs Act should be repealed or so amended as to provide that all drugs sold to the public under their official names, or resold to the public under their official names or recognized synonyms, shall be of standard strength.

The report was received and referred to the Council.

Adjourned.

CLARISSA M. ROEHR, Secretary...

The resolutions from the House of Delegates, acted upon August 23, 1912, were considered *seriatim*.

Resolutions marked Nos. 1, 2, 3, 5, 6 and 7 were laid on the table for further consideration, and Nos. 8 and 9 were adopted. Resolution No. 10 was amended by deleting the words "repealed or" and adopted.

J. H. Beal asked that the resolution relating to the appointment of a Chief of the U. S. Bureau of Chemistry be deleted from the records.

On motion of J. P. Remington, seconded by C. A. Mayo, the request was granted, and the resolution ordered deleted.

The following resolutions from the House of Delegates, acted upon August 22, 1912, were approved:

(1) That delegates from the Local Branches of the A. Ph. A. be represented in the membership of the House of Delegates.

(2) That the ex-presidents of the Association be invited to attend the meetings of the House of Delegates and participate in the work.

(3) That the report of Committee on Simplifying the work of the General Sessions of the Association be referred to the Committee on Revision of Constitution and By-Laws.

(4) That the Association get in closer touch with local pharmaceutical associations be referred to the Committee on Revision of the Constitution and By-Laws.

(5) That the following definition of "adulteration" proposed be approved:

"A substance is adulterated when it differs in any respect from the properties, strength and quality which have been defined by some competent authority."

(6) That the Bodemann resolution on transportation be approved.

H. M. Whelpley moved, seconded by J. H. Beal, that paragraph b of Article 1, Chapter I, of the By-Laws of the House of Delegates be amended from "shall" to "may," after which the by-laws as a whole were approved.

H. M. Whelpley moved, seconded by J. H. Beal, that the Council recommend to the Committee on Finance that an appropriation be made to pay the traveling expenses of the Secretary of the Council; and also, that Article 1, Chapter III of the by-laws of the Council be amended by adding the words, "and the amount of his expenses incident to the meeting in addition to his salary." Motion carried.

The Committees appointed by Chairman Eberle for 1912-13 were as follows:

AUDITING COMMITTEE.

Otto F. Claus, Chairman; F. W. Sultan, Solomon Boehm.

COMMITTEE ON INVESTED AND TRUST FUNDS.

James H. Beal, Chairman; E. G. Eberle, Thos. P. Cook, H. M. Whelpley, ex-officio.

The Committee on Nominations recommended the following nominations:

COMMITTEE ON FINANCE.

J. A. Koch, Chairman; Otto F. Claus, E. H. LaPierre.

COMMITTEE ON PUBLICATION.

J. W. England, Chairman; G. M. Beringer, F. W. Meissner, Jr., F. J. Wulling, J. L. Lemberger; the Editor, Associate Editors and Treasurer, ex-officio.

COMMITTEE ON CENTENNIAL FUND.

John G. Godding, Chairman; James H. Beal, J. A. Koch.

COMMITTEE ON TRANSPORTATION.

W. Bodemann, Chairman; W. C. Alpers, H. W. Whelpley, Chas. G. Merrell, J. O. Burge, Chas. Caspari, Jr., Chas. B. Whilden, F. C. Godbold, W. S. Elkins, Jr., C. M. Ford, C. Herbert Packard, L. C. Hopp.

COMMITTEE ON UNOFFICIAL STANDARDS.

Henry Kraemer, Eustace H. Gane, B. L. Murray, W. A. Puckner, for term expiring 1916.

COMMITTEE ON NATIONAL FORMULARY.

C. Lewis Diehl, Chairman Clyde M. Snow, A. B. Stevens, Otto Raubenheimer, Leonard A. Seltzer, Harry V. Arny, E. Fullerton Cook, H. A. B. Dunning, Samuel L. Hilton, Chas. H. LaWall, Geo. M. Beringer, M. I. Wilbert, W. L. Scoville, Wm. A. Hall, Adam Wirth.

E. G. EBERLE,
J. W. ENGLAND,
Committee on Nominations.

The report was received and the committees elected.

On motion of C. A. Mayo, seconded by J. H. Beal, the Secretary of the Council was directed to furnish the pharmaceutical press with the resolutions of the House of Delegates.

L. D. Havenhill reported certain recommendations made by the Joint Session of the Committees on U. S. P. and N. F., as follows:

(1) That the Report on the Progress of the Revision of the U. S. Pharmacopoeia, read before the Joint session of the Committees on U. S. P. and N. F. be released to the press for publication. Agreed to.

(2) That the next edition of the N. F. be published simultaneously with that of the U. S. P. No action taken.

(3) That the sum of \$250 be appropriated to the Committee on Unofficial Standards for 1913. Referred to the Committee on Finance.

(4) That the Council authorize the creation of a Section on U. S. P. and N. F., and appoint a Chairman, Vice-Chairman and Secretary for the coming year.

J. H. Beal moved, seconded by J. P. Remington, (1) that a Section on U. S. Pharmacopoeia and National Formulary be and that the same is hereby established.

(2) That all the work of the Association pertaining to Pharmacopoeias, National Formulary, Unofficial Standards, and to food and drug standards generally, so far as they come before this Association, be considered by this Section in the future. The motion carried.

J. H. Beal moved, seconded by W. B. Day, that L. D. Havenhill be requested to act as Chairman, and E. Fullerton Cook as Secretary of the Section for 1913, and that they be authorized to elect three associates for the ensuing year. Carried.

Applications No. 403-408 were presented, as follows:

- No. 402. John W. Webb, Main street, Stuttgart, Ark.
- No. 403. William Henry Brown, 4200 Irving Park boulevard, Chicago, Ill.
- No. 404. Alfred N. Cook, 422 Dakota street, Vermillion, S. D.
- No. 405. William Henry McCutchen, Luther, Okla.
- No. 406. Leopold Joseph Schlesinger, 109 Ashburton avenue, Yonkers, N. Y.
- No. 407. Adelbert C. Cole, 1038 15th St., Denver, Col.
- No. 408. Alonzo S. Ryan, 1001 16th street, Denver, Col.

The applications were favorably acted upon.

Nominations of officers for the ensuing year were made, and the following were elected:

General Secretary and Editor of the Journal, James H. Beal.

Treasurer, Henry M. Whelpley.

Reporter on the Progress of Pharmacy, C. Lewis Diehl.

Adjourned.

J. W. ENGLAND, Secretary.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

THE PHARMACOLOGICAL ASSAY OF PITUITARY PREPARATIONS.

H. C. HAMILTON.

The function of the hypophysis cerebri or pituitary body continues to be more or less of a mystery notwithstanding the wide investigation which has been conducted. It has been conclusively shown, however, that the posterior lobe of the gland contains physiologically active substances, which are of considerable therapeutic importance. In addition to the marked increase in blood pressure which follows an intravenous injection of the infundibular extract, and which will be discussed later in this paper, the drug is known to have a strong stimulating action on the muscular fibers of the uterus, bladder and intestinal tract. This phase of its physiologic action has led to the extensive use of preparations of this gland in various obstetrical and surgical clinics, in dealing with uterine insufficiency and post-operative and puerperal atonic conditions of the bladder and bowels. The drug has also a diuretic action and, as recently shown (Otto, Schafer and Mackenzie) is an active galactagogue.

In very large doses and when administered over a long period of time, certain untoward results, as disorders of carbohydrate metabolism, motor disturbances, aberrations of the circulatory and respiratory systems may occur. However the amount of pituitrin required to produce such disturbances is so far in excess of the therapeutic dose that they can be ignored in considering the therapeutic action. The above symptoms are practically those which are characteristic of the extirpation, or atrophy of the gland. This is exactly the reverse of the results to be expected, since, in general, gland extracts, or the dried gland, administered to animals in which the gland is absent or inactive will partly or wholly compensate for the deficiency.

This gland presents another anomaly which may in part explain the peculiar action of its extracts. Of the two parts, the anterior and posterior, or infundibular portion, only the former is of vital importance, while only the latter contains a substance having a recognizable physiologic action when hypodermically administered.

With the importance of this gland in medicine, however, this paper is not concerned, but only with means of standardizing preparations obtained from it.

The drugs which are of value in medicine are scrutinized with great care, especially those which are powerful in their reaction. Wherever possible they are assayed with minute exactness. Many of the most valuable remedial drugs contain principles which are either known in a pure state, or of such complex composition

as to defy the skill of the analyst. For such drugs it is customary to make use of some constant and typical reaction which the drug has when administered to an animal.

This method known as the pharmacologic assay depends for its adaptability on the sharpness of the reaction and its sensitiveness to changes in the quantity injected.

Reviewing the typical effects of preparations of the pituitary gland, that on the kidneys causing polyuria seemed to meet the requirements for an assay process particularly logical if this effect were, as stated by Prof. Schafer, "essentially due to the glandular cells of the organ being stimulated to activity by the agency of a specific hormone."

Houghton and Merrill (*Jour. Am. Med. Ass'n.* Nov. 28, 1908) failed to convince themselves that this hypothesis is correct finding that the reason for the increased urinary flow is chiefly, if not entirely, dependent on the increased blood pressure. Neither is this reaction typical of this drug alone, since others which affect the blood pressure have a similar effect on the kidneys.

McCord (*Archives of Internal Medicine*, November, 1911) found that when the isolated kidney is perfused with Locke's solution containing active pituitary extract 92% of the experiments caused typical constriction and no fatigue of the organ was evident even after 20 injections. He suggested that this might be used as a means of standardizing preparations from the gland.

This method has not been given a conclusive trial since it has certain features which would tend to interfere with its quantitative exactness. It may, however, have undeveloped possibilities and when carefully followed up be found applicable to the problem.

Most investigators of this interesting body agree that the intravenous injection of extracts of the gland into dogs is followed by an increase in blood pressure, which is both rapid and pronounced. It resembles in some respects the change in blood pressure which follows the administration of adrenalin, both being caused by a constriction of the arterioles.

The resemblance between the actions of the two glandular extracts ceases with this, however, since the duration of the increased blood pressure due to pituitary extracts greatly exceeds that from adrenalin, and according to Cushney, Wiggers and others, is probably caused by direct action on the muscle instead of on the nerve endings.

The action of pituitary extracts on the blood pressure of dogs differs from that on rabbits and cats in the fact that the depressor action is not so quickly evident. Various workers, Schafer, Cushney and others, have noted that with animals other than dogs the second and subsequent injections of equal quantities of an active preparation of the gland bring about progressively smaller increases in pressure until a point is reached where no pressor but only a depressor effect follows. When large doses are used or when the injections are frequently made for a long period this action would vitiate the results even with the dog; but under the conditions of the test very little evidence of it appears.

This, then, is a typical reaction and while other effects are of more importance in therapeutics, no other lends itself more readily to measurement. While there is much to be desired in sensitiveness of the reaction to changes in the quantity

injected, the change in blood pressure is fairly constant and until a more accurate method has been evolved this can be used with confidence as a means of comparing the activity of one extract of the gland with that of another. When one of the two is a standard the assay is quantitative.

The method as now followed for determining the activity of extracts of this gland resembles in many of its details that used for standardizing extracts of the suprarenal gland or specifically for the assay of adrenalin. It depends on the fact that consecutive injections of a certain quantity of the active constituents of the gland under rigidly defined conditions increase the blood pressure of an anaesthetized dog to the same degree.

If the circulatory system be connected from an artery to a kymograph, tracings can be obtained which show this action of the extract and illustrate its applicability to the purpose.

The dog should be one of approximately 10 kilos weight.

It is best anaesthetized by an intraperitoneal injection of chloretone in oil (0.3 gm. per kilo).

The injections can be made most conveniently into a femoral vein and the blood pressure recorded from the carotid artery by means of a mercury manometer.

The amount of the active principle which is found best for injection is that contained in 0.02 gm. of the fresh, or 0.001 gm. of the desiccated, defatted gland, the increase in blood pressure resulting from an injection of this quantity being very nearly the same as that from 0.00001 gm. adrenalin, although no such comparison can be made use of in standardization work.

The preparation used for the standard is the dried, defatted, powdered gland, which is a stable product. Of this powder 0.001 gm. corresponds to approximately 0.02 gm. of the fresh gland. The solution for injection is made by rubbing 0.1 gm. of the powder in a mortar with successive portions of acidulated water until the yield is 100 cc. This solution should be either decanted or filtered from the sediment. One cc. of this solution contains the standard test dose. The reason for choosing this quantity is that the dog is more sensitive to small changes from this amount, that is, to variations in the quantity of active constituent which is contained in the solutions being assayed.

In making an assay the normal height of the dog's blood pressure is to be recorded first, then the height to which the standard test quantity will increase this pressure. After two or more injections of the standard are made, to determine the average increase in blood pressure, that quantity of the unknown sample which is supposed to contain an equal quantity of the active substance is injected.

If the rise in blood pressure from the injection of the sample is different from that produced by the test dose of the standard the amount of the sample used is varied accordingly until an amount which has a reaction equal to that from the standard test dose is found.

From this we can deduce the activity of the sample, since the same amounts of active substance must have been present in the two quantities which, when administered in the same manner consecutively, induce the same rise in blood pressure.

THE JOURNAL OF THE
THE ASH STANDARD.

EDGAR L. PATCH, BOSTON.

What shall be the ash standard of official drugs? One might naturally say it can be nothing else but the ash yielded by an absolutely clean specimen previously dried to constant weight at an appropriate temperature, taking into account the nature of the drug. Possibly the acid solubility of the ash should be considered. Experience demonstrates that a standard based upon a select sample is not practical in the present condition of the market. Aside from the variation in mechanical dirt, the proportion of inorganic salts in drugs varies materially. A few examples will explain the difficulty. All figures refer to ordinary air-dry drugs.

BELGIAN VALERIAN.

One thousand pounds select root run through rolls and passed over No. 80 sieve gave 227 pounds or 22.7% of drug assaying 68% ash. The remaining 773 pounds assayed 10% ash. A sample of the whole root washed, brushed and dried gave 5.2% ash. In this case after discarding 22.7% of drug the remainder assayed nearly twice as high as a specially prepared sample; yet it would hardly be practical to undertake any better cleaning of large quantities of root. Probably the extractive yield of the drug to menstrua has been based upon a drug not even cleaned as well.

CULVER'S ROOT.

One thousand pounds select root broken on rolls and sifted over No. 80 sieve gave 242 pounds of powder yielding 66% ash. The remaining 758 pounds of percolation powder gave 6.5% ash. A select cleaned sample gave 2.9% ash.

ALETRIS.

One thousand pounds select root broken on rolls and sifted over No. 80 sieve gave 274 pounds of powder assaying 59% ash. The 726 pounds of percolation powder assayed 15% ash. A select cleaned sample gave 5% ash.

MEXICAN SARSAPARILLA.

Cut on cutting machine and sifted over No. 40 sieve gave 48 pounds assaying 68% ash. Run through rolls and sifted over No. 40 sieve, gave 52 pounds assaying 60% ash. Nine hundred pounds percolation powder assayed 15% ash. A select cleaned sample gave 9.4%.

PIPSISSEWA.

Only the leaves are official. Call for samples of U. S. P. product from a dozen sources was met by sending the entire plant in every case. One thousand pounds of plant gave 713 pounds of leaf assaying 3.5% ash.

PINKROOT.

One thousand pounds put through rolls and sifted gave 172 pounds assaying 69% ash; 828 pounds of percolation powder gave 28.5% ash. A select cleaned sample gave 8.16% ash.

Such examples could be multiplied, but enough has been given to demonstrate the difficulties in the way of establishing a practical ash standard. Digitalis usually contains adhering sand that cannot be gotten rid of. Different lots of powder contain varying amounts of sand, yet one lot with high sand contents may

assay much higher than another with low sand contents. In the case of drugs having an alkaloidal standard it is doubtful if an ash standard should be established. The following table gives results obtained with certain drugs and the standards given by different authorities.

Percolation Powders	U. S. P.	Other Authorities	Other Pharmacopœias
Arnica flowers.....11.5%	10%	15%	10 to 20%
Asafoetida .....5 to 56%			
Bellad. leaves.....14.4%			
(0.37% alk.)	2%	4.93%	1.5 to 2%
Benzoin .....1.2%			
Burdock Root.....7%			
Calamus peeled.....3.5%	(Purified Digitoxin (0.027%) (0.026%) (0.023%)	7.52% to 12.55%	6 to 10%
Cascara Amarga.....3%			
Cascara Sagrada.....5%			
Cherry Bark.....4%			
Clover Red.....8.6%			
Coca Trux.....13.5%			
Cubeb .....7.6%			
Digitalis .....8%			
9.5%			
18.5%			
Elm Bark.....12.4%	(Alc. Ext. 60 to 72.5%)	10%	5 to 7%
Elecampane .....7%			
Fennel Seed.....8.4%			
Gentian Root.....3%			
Kola Nut.....3.5%			
Larkspur Seed.....6%			
(alk. 1.62%)			
Lupulin .....9 to 16%			
Nux Vomica.....3%			
Pinkroot .....28.5%			
(Select 8.16)	18.72% to 40.81%	8.52% to 30.97%	3 to 3.5%
Quassia .....4.4%			
Squill .....3%			
Stavesacre .....13%			
Valerian .....10%			
(Select 5.2%)			

A FEW DRUGS AND PREPARATIONS SUBMITTED TO U. S. P. QUANTITATIVE TESTS.

Result of a series of examinations recently made in the laboratories of the College of Pharmacy of the University of Minnesota.

FREDERICK J. WULLING.

The college has made annually for twenty years now an investigation into the quality of the materia medica of the Northwest and has reported its investigations regularly to the Minnesota State Pharmaceutical Association, in whose proceedings nearly all reports may be found. The reports may or may not merit wider

publicity, so I submit them for what they are worth. This year's report is much briefer than usual and is arranged in tabular form:

SUMMARY OF RESULTS.

Names of substance examined	U. S. P. Requirements	Results of assays in percentage	COMMENTS
Dilute Acetic Acid.....	6% absolute acid	5.85 7.42	Only dilute acids were examined. Pharmacists usually prepare these by diluting the stronger acids and if these are not of the required strength the dilute acids vary from the standards unless they are assayed and standardized, which is seldom done. The samples examined met the requirements fairly well.
Dilute Hydrochloric Acid	10% absolute acid	6.78 11.34	
Dilute Sulphuric Acid..	10% absolute acid	10.57 10.70 11.00	
Aromatic Sulphuric Acid	20% absolute acid	14.51 16.85 17.80	
Ammonia Water.....	10% by weight of NH_3	5.30 6.88 7.75 7.84 13.32	I have rarely found a sample that tested 20%.
Stronger Ammonia Water	28% of NH_3	23.00 26.20	These samples were bought in five and ten-cent lots from Minnesota drug stores and were labeled in each case "Ammonia Water." Pharmacists claim they must meet the competition of the department and 5 and 10 cent stores for a cheap household ammonia. They err, however, in using the official title.
Spirit of Nitrous Ether.	4% Ethyl Nitrite	2.14 2.26 2.57 3.42	The sample assaying 23% was taken from a freshly opened carboy.
Syrup of Ferrous Iodide	5%	5 samples, all below standard	It is very rare indeed that samples are found that meet the full U. S. P. requirements.
Sodium Bicarbonate....	}	{	Two of the samples were prepared with great care in our own laboratories. They did not assay 5%. This has been our previous experience. I doubt whether the official formula will yield exactly a 5% product.
Potassium Bitartrate...			
Potassium Iodide.....			
Solution Magnesium Citrate			
Seidlitz Powders.....			
		1 sample of each assayed satisfactorily	

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

PLEA FOR ANOTHER SECTION IN THE A. PH. A.*

L. E. SAYRE.

Members of this Association are attracted to its meetings by the greatest diversity of motives and interests. New members are drawn toward and into its ranks because of its wide range of usefulness. The groups of interests form a rather varied program covering, as they do, the commercial, legislative, educational, scientific, and manipulative phases in the vocation. Each and all of these interests grow in an atmosphere of sociability, hence the social phase of the organization is by no means the least important in its varied program. Another subdivision, it seems to the writer, would be decidedly advantageous.

If one looks over the printed records of the various sections he will find that there has been a mass of material scattered through them bearing upon the U. S. P. and N. F. It is the writer's opinion that this material is becoming more and more important and vital. Its production should not only be fostered but means should be devised to stimulate and to better systematize the work in this line. Just now, no other work in the association is quite so important. To promote the end suggested a special section on Drug and Formulary standards (or some other appropriate title) might well be created.

There would be invited to such a section an increasing number of contributors, and an increasing breadth of usefulness would follow. Indeed it is the writers's opinion that such a section would become one of the strongest and most useful in the organization. Its main object should be to work along constructive lines bearing upon the general interests of the two publications named, to promote the interest of these two standards in various directions.

How frequently the simile—the Medical Bible—is used to designate the Pharmacopœia? This simile is becoming more and more appropriate because of the fact that so few are familiar with its pages. It is surprising to those who realize the underlying principles of unification, which characterize the aim of the U. S. P. and N. F., in connection with remedial agents, that they do not have a greater reach of influence in the medical profession. The responsibility for the extension of such influence should be in this section taken, and, the work along this line, organized and systematized—its volunteer members would naturally form a group whose work would be continuous from year to year.

I was recently very much impressed with the lack of reach of this influence, when called upon to discuss with a hospital committee a proposed set of hospital

* This Section was subsequently created by Council Resolution.

formule. I was the only pharmacist in the company. I soon realized the prevailing lack of appreciation of the two works referred to. Not only was there a manifested vagueness as to the spirit of these commonly accepted standards but there was a prejudice showing itself in a kind of desire to get away from and to be independent of them—an inclination to form a set of combinations “of our own make” as it were. Fortunately, however, by a little persuasion this committee was brought around into a more favorable disposition—to accept these two works as the best standards for a working basis.

Members of a section such as is proposed, would naturally find abundant avenues, such as suggested to extend the reach of its influence. A systematic bureau of diplomacy and a continuous campaign of education such as a section as this would create, would reap an abundant harvest for the benefit of both professions, pharmacy and medicine.

PROGRESS OF THE REVISION OF THE UNITED STATES PHARMACOPOEIA.

JOSEPH REMINGTON, PH. M.

It will doubtless be of interest to the members of the American Pharmaceutical Association to be informed on the present state of the work of the Committee on Revision.

It will be remembered that an Executive Committee of fifteen, chosen by the votes of the General Committee of fifty-one, have immediate charge of the work of revision. The work was divided into fifteen parts and a member of the Executive Committee was chosen as the chairman of each sub-committee. The members of the sub-committee were selected for their special knowledge of the subjects treated by each sub-committee and several are members of several sub-committees. In each case the member was consulted before his appointment, as it was particularly desirable that each member should contribute his share of work to the general fund.

Like every constructive work of this character, which is voluntary, some members have borne a greater share of the work than others. Some are very willing to assume, at the outset, obligations which they cannot fulfill and events proved that the chairmen of the sub-committees have had to proceed without their help. This has thrown a large amount of work upon the chairmen who have had to send in their reports to the Executive Committee after the continuous urging of the general chairman to keep going.

Admissions and Deletions.

Experience has again demonstrated the value of the plan, which was first used in the last revision of the Pharmacopoeia, of culling out the subjects which require little or no revision and starting work upon them. This was particularly

the case with the report on admissions and deletions. A preliminary list was sent out for which it was believed a majority of the sub-committee would certainly vote for admission, leaving debatable subjects for later consideration. This enabled the chairman of the Executive Committee to begin the work and give a number of subjects to each sub-committee for a start. From time to time the chairman of the sub-committee on Scope reported lists of other subjects which had obtained a majority of votes for admission and at the last meeting of this Association in Boston, the tentative list was submitted, and, with very few exceptions, has received the general approval of those interested in the Pharmacopoeia. Some of the physicians on the General Committee have vigorously objected to the admission of some of the drugs and preparations found in this list, for it must be understood that a small but active number of physicians believe that only a very limited number of drugs and preparations should be admitted to the Pharmacopoeia. A larger number of the members of the committee desired the admission of drugs and preparations that are used to a large extent in any section of the country.

In the writer's opinion, entirely too much stress has been laid upon this part of the work. Physicians will continue to prescribe unofficial substances as they always have; some even pride themselves upon the fact that they have no use for the Pharmacopoeia and that they do not use such common things as do the general run of practitioners. But the committee have not accepted the view of a skeleton Pharmacopoeia, nor have they approved of a padded one.

While upon this subject, it should be stated that the list has not yet been closed and it is proposed to make a few more additions and deletions.

Patented Products, Synthetics, Etc.

The subject of admitting controlled products, patented, copyrighted, or otherwise monopolized, has been made a subject of debate. This question has always proved a stumbling-block in previous revisions and the question is more important today because of the immense number of such products now in general use. Manufacturers and their agents have been very active in insisting upon their legal rights in protecting their property. Physicians have been luke-warm and the majority insist on prescribing anything which they believe will aid their patients to recover health.

The great difficulty is the practical one of introducing into the Pharmacopoeia any substance over which there can be no control of identity and purity. The Pharmacopoeia might introduce a controlled product under its name or a new name, but of what use would be the official tests? The manufacturer could at will alter his product in some way, by changing its color or in some other unimportant particular. The National and State Food and Drug Acts would, of course, recognize the official preparation, but it could not be had in the market and it would be taking up valuable space. The manufacturers almost to a unit declare that they do not care whether the Pharmacopoeia admits their products or not. Naturally they do not care to have any authorized supervision over their property and so long as their sales are not interfered with, they do not want to be hampered in any way.

Our courts have recognized proprietary rights in medicines and the introduction of controlled products would amount to an advertisement showing that such and such a product had found favor in the sight of the Committee of Revision. The complications would be endless. There would probably be two kinds of the same preparation on the market—the manufacturers' and the official. A physician prescribing such a preparation might have the manufacturers' product in mind; the pharmacist might have in stock only the official.

In cases where the patent has run out on certain largely used synthetics, for instance, Phenacetin, the difficulty has been met by introducing the substance under a different name, but many of the largely used synthetics are sold under patents which are still alive. It would seem that the only solution would be to have an agreement with the manufacturer, firm or corporation controlling the product, but this would be of doubtful utility and would only obtain in a very few cases. The manufacturer would not care to imperil any of his right to exclusive manufacture. Where a patent will run out within a year or a comparatively short time, he might be willing, for the sake of the advertisement and to increase his sales somewhat, particularly in view of a competing preparation which was supplanting the older product.

Nomenclature.

The subject of Nomenclature has been settled by the Executive Committee on the following basis:

"That changes in the titles of articles at present official be made only for the purpose of insuring greater accuracy, brevity or safety in dispensing, and that in the case of newly admitted articles titles be chosen which are in harmony with general usage and convenient for prescribing, the scientific name being given at least as a synonym in the case of chemicals of a definite composition.

"That in stating the strength of acids in the U. S. P. they be stated in such terms as Hydrogen Chloride, HCl, 'absolute hydrochloric acid'; Hydrogen Phosphate, H_3PO_4 , 'absolute orthophosphoric acid'; Hydrogen Acetate, CH_3COOH , 'absolute acetic acid', etc."

It is not likely that there will be any serious objection to continuing the present style of Latinization so that it would affect the labels at present in use throughout the country. The experience of 1906 and 1907 of manufacturers, wholesale druggists, retail druggists, and physicians when the Food and Drugs Act went into effect is one long to be remembered. Many thousands of dollars worth of labels had to be destroyed and the labor, confusion, and loss of money was very great. But it was worth the trouble and the label today has vastly more significance than ever before.

Synonyms.

The subject of synonyms has correspondingly increased in importance. Some druggists seek to evade the official requirements by avoiding an official name and use a name which will permit the sale of the substance without incurring much risk. It is difficult to see how the Pharmacopoeia can cover the field thoroughly because, like when exterminating rats, if one hole is stopped another is sure to be

opened in a new place. There is no question, however, that the list of synonyms in the Pharmacopoeia will have to be increased.

Physical Factors.

The question of stating Solubilities of substances in the Pharmacopoeia has occupied much attention. Of course it would be most desirable to give an exact figure for the solubility of a substance in water, boiling water, alcohol, diluted alcohol, glycerin, ether, chloroform, petroleum benzin, fixed oils, and other solvents. It would also be desirable to introduce a uniform method of taking solubilities. There are physical difficulties, however, which would lead to false figures and the methods of the physical laboratory, which are most accurate, would be entirely unsuited for the use of the pharmacist and physician. For a book like the Pharmacopoeia the latter rarely require a method which necessitates a thermostat or a continuous agitation apparatus or a method which requires a long time to determine the exact solubility. But the principal reason for making an exception and not inserting a uniform method for determining solubilities is that solubilities alone are inconclusive tests for identity or purity. They are useful physical factors within certain ranges, but in view of the abuses which might arise, particularly in legal contests, where solubilities are stated with decimal figures and because it would be possible to involve honest manufacturers, retail druggists, and others in needless criticism and often unjust accusation, it has been deemed best to state solubilities in rounded figures or by giving a range. It is not proposed to drop the use of figures in stating solubilities, but a statement will be inserted in the introductory notices of the Pharmacopoeia giving the reasons for not regarding solubilities as conclusive tests. This question is, however, open for further consideration.

Melting points, boiling points, and specific gravities do not fall within this category and uniform methods for obtaining these physical factors will doubtless be inserted.

Standard Temperature.

The Executive Committee and General Committee on Revision have voted to retain 25° C. (77° F.) as the standard temperature for specific gravities and other purposes. A table will likely be inserted in the appendix giving corresponding values at 15° C. and 20° C. for official specific gravities.

The work on the Inorganic and Organic Chemicals is nearly completed and this occupies the largest number of pages in the book.

Pharmacognosy and Botany is well advanced. The reports on Galenical Preparations are well in hand. There still remain the editing and the preparing of the final manuscript. This, of course, cannot be done until all of the reports have been passed upon. When this work is completed, printing will begin and publicity will be given to whatever changes have been made in tests and standards.

The following table shows the number of pages of official bulletins, letters and circulars issued by the various sub-committees and committees, the communications from firms, corporations, physicians, pharmacists, scientific bodies, and the

public generally, and the replies thereto are not included in the summary, although they constitute a large amount of correspondence.

SUB-COMMITTEE BULLETINS.

	Pages
No. 1—Scope	288
No. 2—Therapeutics, etc.	156
No. 3—Biological Products, etc.	80
No. 4—Botany and Pharmacognosy.....	252
No. 5—Inorganic Chemistry	430
No. 6—Organic Chemistry	797
No. 7—Proximate Assays	270
No. 8—Volatile Oils	89
No. 9—Fluid and Solid Extracts.....	218
No. 10—Waters and Spirits.....	175
No. 11—Syrups and Elixirs.....	253
No. 12—Cerates and Ointments.....	49
No. 13—Miscellaneous Galenicals	121
No. 14—Tables, Weights, etc.	75
No. 15—Nomenclature .....	...
Executive Committee Letters.....	1311
General Committee Circulars.....	596
Total	5165

The text has been reported to the Executive Committee for 500 articles to this date.

GETTING A PERSPECTIVE.

In the drawings and paintings of the Middle Ages the gallant knight on horseback was depicted as directly up against the castle beyond him, whose distance in the perspective was only indicated by the relative sizes of the castle and the knight. We have somewhat similar effects in Chinese decorations. This effect is due to the fact that the artists of the Middle Ages and of China did not understand the value of perspective, nor know how to produce it.

There are engaged in the retail drug business many druggists who, like the artists of the Middle Ages, have no knowledge of the value of perspective. For in business, as in art, the perspective is of the first importance. The average retail druggist is confined to his store for so many hours in the twenty-four, is so burdened with the infinity of detail which is involved in the transaction of his business in little things that he is apt to lose his perspective and fail to catch the public point of view when it comes to selling goods, whether by word of mouth, by written letters or by printed advertisements.

The druggist can help himself toward a proper perspective of his business by sane and helpful recreation, recreation which would take him away from his business among men of other interests and preferably out of doors that his body as well as his mind may be refreshed. We do not counsel any laxity in attention to business on the part of the retailer. At best it is an exacting vocation and pharmacy a jealous mistress, but the druggist who works hard at his calling for six days a week requires for his welfare and his best development, physical, mental and commercial, a seventh day free from the cares of trade and the annoyances of business, while once a year he should have at least a fortnight of change and rest. These vacations will by no means be time wholly lost, for they will aid the druggist to that proper perspective of his business and its relation to the public which is essential to the highest commercial development and will, moreover, prolong as well as increase his usefulness as a business man.—*Am. Druggist*.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

INTERNATIONAL COOPERATION IN PHARMACY.

J. J. HOFMAN, SECRETARY OF THE "FEDERATION INTERNATIONALE PHARMACEUTIQUE."

One of the most striking phenomena of our times is the ever-increasing co-operation of the nations in all matters. The improvement in the means of communication, and the development of the means to render the mutual intercourse between the nations less dependent on the distance which separates them, have in the first place contributed to advance this kind of internationalism. While in former times man had to rely on his immediate surroundings, there are now all kinds of international ties which govern our present-day society. The daily supply of food and other articles is no longer exclusively produced by the immediate surroundings, but the markets of all countries carry on a lively trade in the products of East and West. They act like communicating vessels which convey the surplus of articles produced in one place to other places where there is a want of them. The postal services which have formed the "Union Postale Universelle," promote the communication between the different nations; the railways which, owing to the uniformity of gauge, connect all countries, enable us to accomplish the longest possible distances in the shortest possible time, even without change of carriage. The telegraph service whose net of wires has a total length of twenty-five times the circumference of the earth, transmits with incredible speed the messages which very often are of vital importance to social and political situations. Money too, as an international power, for the foundation of a great number of societies is only made possible by the cooperation of the capitalists in the different countries, and a few exchange-orders may be the cause that an enterprise loses its more or less international character. There is in all matters a desire for uniformity, which gradually develops through evolution. The metric system of weights and measures was introduced years ago, and only here and there we find remnants of former systems which, in many respects, considerably hampered commercial traffic. The administration of justice is being arranged on an international basis, while life insurance, the copyright, the trademarks, and a large number of other things are protected everywhere by international arrangements. As to the public health too, the different nations are coming to an understanding in order to oppose contagious diseases and to take measures conducive to the general hygienic conditions of the people, for instance, by the founding of the Office International d'Hygiène Publique, some time ago.

In the department of science, this cooperation is gradually increasing, and its development is unlimited. The progress of our great scientific centers spreads

its light all over the world, and the greatest obstacle for this extension, the linguistic difference between the nations, is being gradually eliminated. The study of foreign languages increases among all civilized peoples, and moreover the problem of an international language which could serve as a means of communication between all nations is very much nearer a solution.

Pharmacy has also experienced something of the present tendency; not only in the commercial department but also in the scientific and social departments it experiences the consequences of this increased mutual cooperation of the nations. The influences of over-production and want on the market-prices are felt much sooner now than formerly. The sales of our principal drugs in Amsterdam, Hamburg, or London govern the prices throughout the world. The extensive chemical industry also has trusts and cartels on whose cooperation depend the prices of a great number of materials. The newest products of this industry are spread all over the world in a very short time, and the investigations of our scientific laboratoria are published by the press everywhere.

The first sign of an international cooperation in treating of these general subjects by a meeting of chemists from different countries, may be found in the first international congress which was held at Brunswick in 1865. If we look through the subjects treated there, we perceive that already at that time pharmacy was occupied by important problems in the different countries; how already at that time there was a desire to try and attain the required result by collaboration. Very soon after, in 1867, the next international congress was held in Paris, which was followed two years later by a congress at Vienna. The following congresses at St. Petersburg, London, Brussels and Paris, have tried in the same way to unite the pharmacists, whenever problems arose which could be solved by international arrangement or cooperation. As a result of these congresses, may be mentioned the international conference which was held in 1902 in order to bring about uniformity in the composition of strongly active medicines. At different congresses the problem of an international pharmacopoeia was frequently mentioned. A committee, of which Mr. von Waldheim was the chairman, has already, with the assistance of pharmacists of several countries, made up a scheme for such an international pharmacopoeia; and although the desired uniformity has not yet been arrived at, we are now owing to this international conference called together on the initiative of the Belgian Government—agreed on the point of those medicines which are considered strongly active preparations in general use. This problem will be studied further, when the international office for the uniformity of pharmacopoeias will have been established. The adulteration both of medicines and of food, and how to cope with this evil, has also been a subject for discussion at many international meetings. Last year the international opium conference regulated the traffic in narcotics and coca.

A no less important subject is the uniformity in nomenclature in pharmacy, and the endeavour to bring about a change in the ever-increasing confusion which threatens us not only in the official codes and in the pharmacopoeia, but also in the commercial names. The American Pharmaceutical Association has appointed a special international committee for the study of this subject, and we may reasonably expect that the persons appointed to consider this very important problem will soon request the other pharmaceutical associations throughout the

world to assist them in their task, in order to come to the necessary uniformity on this point, and to make up a definite system.

The pharmaceutical press also wants concentration. International organizations which are able to obtain exact information about all that happens in the department of science, are becoming more and more a matter of necessity. At present, one periodical takes communications and other news from another, and in this way the news makes quite a journey through the whole professional press; and on this journey, some communications are shortened here, extended or joined on to other matters there, so that at last the original articles very often have assumed an entirely different form; very often also the origin is quite lost.

In 1913 there will again be held at The Hague an international congress of pharmacists from all parts of the world, and undoubtedly, many important problems will again be introduced for discussion at this eleventh congress. Meanwhile a few years ago, a federation was founded with the object to advance the pharmaceutical congress of a more permanent character in the future. The Federation Internationale Pharmaceutique, the foundations of which were laid at the tenth international congress held at Brussels, on the initiative of the Nederlandsche Maatschappij ter bevordering der Pharmacie, is the association which has to promote the international cooperation of pharmaceutical societies throughout the world. Such an international association must be conducive to all organizations, and to every feeling of fellowship; to every attempt at internationalism. As a result of a great many international affairs, there necessarily arose a permanent organ of this kind, an institution which is of universal importance in the widest sense, and which is within reach of all those working in the same direction, private persons as well as societies, in all countries of the world. Such an international federation is necessary in order to secure the regular working of the international congress; for surely, the resolutions of these congresses may be of a far greater influence than they have been up to the present. In the course of time they have become the index for the social and scientific evolution; for the countries which took part in the congresses, they have become a standard by which the development of the profession, the direction of the tuition, legislation, and so many other important affairs, might be guided into the right path. This influence will increase if there is an international institute to make the work of these congresses permanent. The establishment of this Federation Internationale Pharmaceutique which so soon obtained the full approval of a great many pharmaceutical associations throughout the world, has proved that the most important pharmaceutical societies of Holland, Germany, Austria-Hungary, France, Great Britain and Ireland, Denmark, Belgium, Russia, Roumania, Sweden, and Switzerland, in all 19 associations with 26000 members, have joined the Federation; while, moreover, several smaller societies and private persons have joined as extraordinary members.

The object of the Federation is the promotion of pharmacy both as a profession and as an applied science, along international channels; and according to the regulations, the Federation will endeavor to attain this object by:

1. Collecting data with regard to the pharmaceutical profession in all countries, and by supplying information on scientific and practical pharmacy.

2. By promoting uniformity in the qualifications required for education and tuition.

3. By studying the laws regulating the pharmaceutical profession.

4. By giving advice and supplying data with regard to the laws relating to pharmacy.

5. By organizing international pharmaceutical congresses.

6. By filing the papers of these international congresses, arranging and working out the subjects treated there, and studying fresh subjects for treatment.

7. By making arrangements for taking part in congresses of interest to pharmacy and by collaboration with other international societies.

8. By protecting the rights of the pharmaceutical profession.

9. By opposing the sale of secret remedies and the practicing of pharmacy and sale of medicines by unqualified persons.

10. By promoting the prosperity of the national pharmaceutical societies.

11. By promoting uniformity in the form of medicines and methods of analysis.

13. By exercising its influence in the event of an international regulation of patents, brands and trade-marks.

12. By promoting international entente regulating the drug trade.

14. By the publication of papers on subjects of interest to international pharmacutics.

15. By doing all other things which are conducive to the attainment of the object of the Federation.

When we consider this programme, we shall see that its realization will be of great use to pharmacy throughout the world. If, for instance, we look into the qualifications for education and tuition in the different countries, we see that they are nowhere the same, and the only reasons that can be given appear to be the wants of each nation separately, and the different degrees of civilization which the nations have attained. But for a development in the right direction, it is necessary that the demands for the profession should not be too high in one place, while in another science is not made sufficiently serviceable to the practical application of pharmacy. By collecting sufficient data concerning the demands of training and tuition in the different countries, practice will teach us what improvements should be introduced in order to make the tuition answer the interest of the community to the greatest possible extent, and in order to make a healthy development of the profession possible.

The same thing may be said about the legal provisions for our profession; for, if several drawbacks of the concessional system have come to light in countries where this system exists, other countries on the other hand have experienced the drawbacks of free establishment. The import, the sale of specialties, the providing of pharmaceutical assistance in the provinces, and a great many other things, will be regulated best, if we possess an extensive practical experience acquired in other countries.

We have said before that it is necessary that the plan of the international pharmaceutical congress should be arranged in a better way. Many important subjects treated there, have not been worked out, because when the congress was over, there was no institute which continued and arranged its work. Many international committees have been appointed which could not finish their task because the necessary guidance was wanting. The archives of these congresses are spread far and wide over the world, and it is extremely difficult to give even an incomplete description of the work executed in this way. The regulation of these congresses also depends on the initiative of the national committees which call them together without consulting the national associations first about the subjects to be treated by the congress. Generally speaking, international cooperation and the foundation of an institute where all the necessary information about pharmaceuticals, etc. may be obtained, are sure to make the rights of the pharmaceutical profession manifest, and to act as a powerful ally in the fight against everything which impedes the development of the profession or encourages the practicing of pharmacy by unqualified persons. The national associations will also benefit by the foundation of such an international federation, because it is desirable and necessary that the office of the federation should keep in touch with the pharmacists in all parts of the world. Where there is no cooperation, or where only local associations exist for the interests of the chemists, it will be the duty of the international federation to promote the forming of an association or a committee which is to be the representative organ of the pharmacists of these countries. It will also be necessary to work for more uniformity in analytical methods, in the composition of galenical preparations, in the regulation of commercial contracts and of the conditions of sale of specialities and other medicines of the kind. We see that the task of this international association is very extensive, and that the work which must be done is of great importance. Much of it can only be done if a special institute is established for that purpose, an institute with a sufficient number of officials and the necessary funds. In a building to be specially constructed for this purpose, there should be a library of scientific books on pharmaceuticals, where also the laws regulating the practicing of pharmaceuticals and related professions in all countries may be consulted; then there should be a list of all pharmaceutical associations as well as all the publications of the educational institutions. There should be a collection of all the periodicals throughout the world, and also lists of the subjects published in those periodicals. The same course of thought which caused Wilhelm Ostwald to write his "Denkschrift über die Gründung eines Internationalen Instituts für Chemie" will be followed by many others who, in trying to form international associations, are looking for the practicability of the work which is to be done by this institute; and consequently such an institute will prove to be a necessity for pharmacy too. As soon as it is possible to survey the entire scope of the work, the time will have come for the realization of the desire to possess a special "workshop" where all these thoughts are put into execution.

An international pharmaceutical institute connected with the Federation Internationale Pharmaceutique must be the "workshop" where the plans and schemes of this federation are worked out. Such an institute must be established chiefly

on an administrative basis; it need not be a scientific institute. Like a patent office, it should be able to furnish everybody with the most reliable information. All pharmaceutical periodicals, while a good administrative system must make it easy for the people to find the subjects they want. The Deutsche Pharmaceutische Gesellschaft issues every year its "Berichte über die pharmacognostische Literature aller Länder;" other "Jahresberichte" also collect the publications on different subjects. In the same way such an international institute can make a permanent archive of everything that appears in the department of pharmaceuticals in all parts of the world, as for instance the names and addresses of all pharmacists, the biographies of the best known among them; information about pharmaceutical associations, etc.

Ostwald rightly says that such an institute must serve to organize science, to divide work, and, by a systematic cooperation of several organs working separately, the better to obtain the required result. Besides a great many periodicals, the institute should possess an extensive library of pharmaceutical works, which library should be kept up to date by buying all new publications; and each writer ought to support the library by presenting it with a copy of his publications. In this way a register ought to be compiled of all the subjects on pharmaceuticals. The "New Medicines," of such great importance for the dispensary, should, in my opinion, be worked out as extensively as possible by the institute, by means of the official returns of the manufacturers. Each more or less important new medicine, from whatever country, should be inserted in this cartulary, together with a record of its composition, its qualities, the maker's name, etc. Every month, copies of all the new official returns should be sent to the different associations which have assisted in founding the institute, so that in this way it is possible for every country to have a complete copy of this cartulary of new medicines. Then the always incomplete and often faulty and unreliable publications in the periodicals could be left out. A special scientific inquiry-office should be charged with the examination of the data and information obtained in the above-mentioned way. There should also be a collection of standard samples of chemical and pharmacognostical products. In the same way this institute might furnish references for pharmaceutical publications. By doing this it might become the source from which several periodicals receive their information, which information should be as reliable as possible. An international language would be very useful for an institute of this kind. I refer those interested in the subject to "Weltsprache und Wissenschaft" by the professors L. Couturat, D. Jespersen, R. Lorentz, W. Ostwald, and L. Pföndler; "Sprache und Verkehr" by W. Ostwald; and other articles. But what will be above all necessary for the foundation of an institute of this kind, are ample funds and the assistance of all those interested in it.

When Ostwald acquainted Ernest Solvay at Brussels, with his ideas about an international institute for chemistry, the latter was prepared to support it, and to give a sum of a quarter of a million francs, while Ostwald himself was willing to give his important library for that purpose. If the idea of founding an international institute for pharmacy comes to be realized, I trust there will be persons ready to give support in the same way; especially because in several countries,

not the least in Germany and the United States, there are great and financially powerful industries which owe their prosperity to pharmaceuticals.

The path for an international cooperation of pharmaceutical associations is now open. Next year, the Hague international congress will strengthen these international ties, and going on in this direction, we may expect that what is now only a picture of the imagination for many people, will become reality in a comparatively short time.

FAILURE OF PHARMACY LAWS.

S. L. HILTON.

Every state pharmacy law has been enacted for the purpose of properly protecting the public, by placing the sale of drugs and poisons in the hands of those especially trained and qualified, the licensed and educated pharmacist, they, at the same time, restrict rigidly the sale of all narcotic drugs and are consequently generally considered public health measures.

A few of the state laws regulate the wholesale drug business by requiring that wholesale druggists must be licensed or keep in their employ at least one person who is so licensed. District of Columbia, Delaware and Virginia have this requirement.

When the law in the District of Columbia was enacted by Congress, we believed we had obtained one of the best laws regulating the practice of pharmacy, the sale of poisons and narcotics, enacted in this country, we also believed it impossible for anyone to handle or sell drugs, poisons or narcotics, except under the supervision of a licensed pharmacist. The law, however, does except dealers who sell poisons for use in the arts or as insecticides; provided, however, they have obtained a permit from the Board of Pharmacy and that such sale be recorded the same as is required of licensed pharmacists. The law further permits the sale by others than licensed pharmacists of what is commonly known as "patented" or "proprietary" preparations, provided they contain nothing that is classed by the law as narcotics or poisons.

Since the enactment of the law there has been a decided improvement in the conditions in the District of Columbia, the number of deaths by poison and the number of cases coming into the hospitals for treatment for drug addiction has been greatly reduced. Recently, however, it came to the attention of the Board of Pharmacy that sales of narcotics and poisons were being made by dental supply houses without apparently complying with the provisions of the wholesale section of the law, that is, by employing a licensed pharmacist, keeping a record of each sale, etc., as required by law.

Sales of narcotics were being made to dentists on demand; likewise were sales made to their assistants and office attendants and possibly others, without question, so that in other words, they were not respecting or complying with the

provisions of the law and at the same time they were claiming the right to sell drugs, poisons and narcotics, regardless of an Act of Congress, for the reason that the law only applied to sales at retail by pharmacists, showing they absolutely overlooked the provisions contained in the Act.

The Board of Pharmacy took up the matter and endeavored to stop all sales by dental supply houses unless they complied with the provisions of the law, and employed a licensed pharmacist. To this they demurred, taking the ground they were exempt from the Act, and took up the matter with the Commissioners of the District of Columbia and the Corporation Counsel, the latter having the enforcement of the law in connection with the Police Department, the result being an executive order was issued by the Commissioners, setting aside the Act of Congress, as pertaining to them, and allowing them to continue the sale of narcotics and poisons. A bill, amending the present law, was prepared and forwarded to Congress by the Commissioners, proposing an amendment to Section 11 of the Act (the narcotic section), granting to dental supply houses the same privileges granted to licensed pharmacists, but without any of the restrictions, and without compelling them to submit any evidence whatever as to their qualifications as is required of licensed pharmacists.

The bill was not referred to the Board of Pharmacy for an expression of any kind. The Board, however, took a firm stand in opposition to the bill, and finally succeeded in having a hearing before a Senate Committee.

This hearing developed a deplorable state of affairs. The attorney representing the dental supply houses admitted that one of them located in the District of Columbia, had sold to a dentist in the state of New Jersey, 200 ounces of Cocaine tablets, certainly more than any dentist would have a legitimate use for in a lifetime, and an elegant argument in favor of interstate regulation of narcotic drugs. He failed to show any good reason why the present law was not sufficient, except that they would be compelled to employ a licensed pharmacist, which they did not wish to do, and that other state laws had no such requirements. Many other admissions were made that surprised the committee.

The Board clearly showed the amendment unnecessary, and as a measure affecting the general public, decidedly dangerous. The present law being ample and sufficiently lenient, should be complied with. The apparent desire of these concerns seems to have been the unrestricted privilege of selling narcotic drugs, creating them a special class, and to enjoy unrestricted privileges not enjoyed by physicians, dentists, veterinarians or licensed pharmacists. The proposed amendment would amend only the narcotic section, and in their apparent desire for this privilege, they had overlooked the poison section, they selling large quantities of poisons, and the amendment, if enacted, would operate to open the way for abuses and to increase the drug evil instead of checking it and would give them no relief whatever with respect to the sale of poisons. Then, too, if such privileges were granted them, general stores, vendors of cork legs and others could demand like privileges, for the purpose of selling narcotics or anesthetics to their physicians. In the judgment of the Board the only amendment needed to the present law was one that would restrict all sales of narcotics to legitimate uses only and close

the channels of interstate commerce except to properly licensed pharmacists, under the strictest supervision.

Previous to the hearing, discovery was made that a surgical supply house was selling narcotics and poisons. A case was made, and after much delay and difficulty, a conviction was obtained in court, under the wholesale section of the law, upholding the contention and thereby strengthening the position of the Board of Pharmacy.

At the present writing, the Senate Committee has not reported on the bill; the dental supply houses are continuing their sales. The fact remains, and one for this Section to consider, as brought out at the hearing, that in other states there is no law prohibiting dental or surgical supply houses from selling all of the narcotics and poisons they desire. Therefore, I believe this question should be taken up and considered by the Section on Education and Legislation, State Boards of Pharmacy and State Pharmaceutical Associations, and an endeavor made to amend the present laws so that narcotics and poisons can only be sold by licensed pharmacists or under their supervision.

I believe it is clearly within the province of this Section to take up and consider this proposition, discuss it fully, and to recommend that all state laws be amended so as to prohibit the sale of drugs, poisons and narcotics, whether at wholesale or retail, except by licensed pharmacists, thereby closing all irregular avenues for supplying habit-forming drugs, except for legitimate use.

The medical, dental and veterinary laws are rigid and well enforced for the reason their respective organizations are giving their constant attention to what may affect their interests. The pharmacist of the past has neglected the opportunities offered along these lines; consequently he has suffered and has been made to stand the burden of many laws that are inadequate and burdensome; therefore, then, the time has arrived when he must look into these questions and use his influence through cooperation and association to obtain better laws and to protect and safeguard his interests.

THE DRUGGIST'S CONSCIENCE.

I believe I am not a pessimist, yet I believe the majority of men are in business to make money without regard to conscience or morality; otherwise the drug business would be conducted far differently than it is by the large majority of proprietors.

What proportion of stores do not sell emmenagogues, narcotics, such as morphine and laudanum, certain classes of rubber goods, baby syrups containing morphine, etc., without an order from a physician? And how many of the stores that do sell them would do so if the proprietor used his conscience?—*H. C. Blair in N. A. R. D. Notes.*

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

LOTIO DELPHINII.

OTTO RAUBENHEIMER, BROOKLYN, N. Y.

"A blockhead bit by lice put out the light and chuckling cried: Now you can't see to bite."

This verse taken from Greek Anthology might have been true in ancient times, but the present generation with its motto: "Time is money" requires a quick and effective remedy against *pediculi capitis* or sometimes even the variety *pubis*. The preparations of larkspur seed, *Delphinium consolida* have from olden times enjoyed a reputation and are still in great demand all over the United States.

For this reason our National Formulary Committee has made numerous experiments and has admitted a 10 per cent. *alcoholic* tincture in N. F. IV, as published in the reports of the Committee.

While this, without question, is a very effective remedy, a great many criticisms have been made on account of its high alcoholic content, which together with the present high price of larkspur seed, increases the cost of the tincture.

In his duty as assistant editor of the department of "Pharmaceutical Formulas" in the Journal A. Ph. A., the writer is always on the alert for formulas which might prove valuable to the pharmacist. In looking over the second edition of that excellent work, the British Pharmaceutical Code, 1911, published by our sister association, The Pharmaceutical Society of Great Britain, I was attracted by the formula for *Lotio Staphisagriae*, Stavesacre Lotion. This is the nuresery hair lotion of the Edinburgh Infirmary Pharmacopoeia and is employed as a lotion for children's hair to kill pediculi and their ova, by being applied once or twice daily after thoroughly combing the hair. According to Peter MacEvan's well-known "Pharmaceutical Formulas," 8th edition, 1911, p. 109 "*it is a valuable preparation, being certain in its effects.*"

Based upon this formula I have constructed the following, omitting the oils of geranium, lavender and lemon, which merely act as a perfume, and replacing the Stavesacre by larkspur:

LOTIO DELPHINII.

Larkspur Lotion.

Delphinium, ground.....	100 gm.
Acetic Acid	50 cc.
Glycerin	50 cc.
Alcohol	100 cc.
Water, a sufficient quantity	
To make.....	1000 cc.

Boil the ground Larkspur Seed with 800 cc., of Water to which the Acetic Acid and Glycerin have been added, for 10 minutes in a covered vessel, set aside till cold, then add the Alcohol and allow to macerate over night. Then filter and add sufficient water through the filter to make the product measure 1000cc. The finished tincture has a brownish-yellow color, resembling tincture of quassia, and a strongly acetic odor. It is clear and even after standing about two months has remained clear. During this time I have sold it as "Larkspur Lotion" at five cents per ounce, the tincture bringing ten cents per ounce, and it has given good satisfaction to my customers.

I am making many experiments with this lotion with the object of improvement as f i. increase in acetic acid, glycerin and alcohol, and also using maceration and percolation instead of heat, and will report on this at a later date.

In my opinion the present lotion is far superior to a so-called tincture prepared by diluting 1 fluidounce of acetic fluidextract of larkspur with 1 fluidounce of alcohol and 14 fluidounces of water. The proportions in this so-called tincture are 60 and 60 in 1000 against 100 and 100 in 1000 in my lotion. The diluted fluidextract also forms a very heavy precipitate which very likely might contain some of the active constituents. And last, but not least, it does not require any pharmaceutical skill to dilute the fluidextract, while the preparation of the lotion gives the pharmacist a chance to practice pharmacy, and this his birthright he must not sell, as it will end his existence.

PERPLEXING PILLS.

R. ALBRO NEWTON.

Veterans are sometimes baffled by the tasks which are set before beginners. Of the many prescriptions used as a test of the ability of students, there is one type which seems fully as bothersome to the dispenser of considerable experience, namely, pills of Silver Nitrate or of Potassium Permanganate.

Bearing in mind the peculiar nature of these substances, we must all agree that ordinary excipients will not be allowable: something must be used upon which these active chemicals will not react. Looking in the text-books we find that Kaolin or Fuller's Earth with Petrolatum is suitable, but this combination makes anything but a nice pill mass to work.

I have experimented to a considerable extent on the process which I am now to describe, and the product is pharmaceutically elegant and therapeutically active notwithstanding the fact that one unfamiliar with it would say offhand that the pills would be better as bullets than as medicine. Experiments have shown that the mixture is completely disintegrated in the stomach and the chemical is presented in an active condition.

Now for the process. Type prescription, Potass. Permanganate gr. xii. Ft. pil. No. 12.

Process. Place 12 grains Potassium Permanganate in a small glass mortar and powder finely. Weigh out 24 grains Paraffin, place in small porcelain capsule, warm until melted; allow to cool and when congealed loosen from capsule by running spatula around edge. Put powdered chemical in center of Paraffin and work into it quickly with fingers. Warm a pill tile slightly by pouring on a little alcohol and igniting it, then wiping with a clean towel. Roll out pill mass quickly into pipe and cut, shaping pills with fingers. No dusting powder is necessary or even desirable, but Talc may be used.

Not more than twenty minutes will be required to prepare this prescription. Stains on fingers may be removed by a solution of Oxalic Acid in dilute Sulphuric Acid. In the case of Silver Nitrate the hands should be washed in a dilute Cyanide solution.

Speaking of pills reminds me of another scheme which is not often spoken about in works of reference. Pills of Ferrous Carbonate are probably the most used ferruginous tonic and the official formula is of such excellence that improvements are apt to be frowned upon. However, I do not deem it a sacrilege to mention that the addition a small amount of Petrolatum will serve to keep the mass soft a very long time, with the added advantage of retarding the change of the iron from its ferrous condition.

I would like to state at this time that I am aware that occasionally Potassium Permanganate and Oxalic Acid are prescribed in the same pill, the object being to secure a pill of freshly prepared Manganese Dioxide. In this case the reaction should be completed by triturating the chemicals together thoroughly and then massing with ordinary excipients, a process not unlike that for making Ferrous Carbonate pills.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

ARE YOU ALIVE?

B. E. PRITCHARD, PITTSBURGH, PA.

This query does not apply to your physical being; the snap of your eyes, the color in your cheeks and your vigorous appearance generally, makes it quite apparent that you are very much alive.

But as a business man and a pharmacist of this very live period in commercial activities, where are you at?

You would quickly resent any suggestion upon my part that you are a dead one when it comes to sorting out the live wires in pharmacy, yet, singularly enough, in my experience in organization work it has been a noteworthy fact that the druggist who will always hollow *sure* the loudest when asked to go on a hunting trip, or is always the first fellow to dig for bait when someone suggests let us go fishing, is, in almost every instance, prompt in declaring that he hasn't time to spare when the appeal comes to lend a hand in any movement that has for its purpose the upbuilding of his business. Funny stunt, isn't it? Yet absurd as it appears, it is true, and I do not think that it is so in my experience alone, either.

We oftentimes hear men engaged in pharmacy talk of the drug business in a manner that reminds us of the old song in which we are informed that

"The old home ain't what it used to be,
The change makes me sad and forlorn,"

when the change so dolefully complained of is all to the good.

The "old home" used to consist of one story and a lean-to, facing a dirt road with ruts in it a half-foot deep, and the getting into town once a week for the mail and the country newspaper (?) meant torture for both you and the old mare. One never knew what was going on in the world until the news was so stale that other folk had forgotten all about it. Now, why should the change make one "sad and forlorn" when going back to the old home means to a neat two-story house, with porches on every side, a nice lawn in front, a garage in the rear, a well-kept state road over which to run the auto into town and back in a half-hour's pleasant spin? With the daily paper in one's hands before noon, and the postman delivering mail at the front gate every day.

And the drug business has advanced in the same happy manner, galvanized dead ones in the ranks to the contrary notwithstanding.

If your recollection of pharmacy carries back to the decade or two immediately succeeding the war of the rebellion, and it is to the conditions that surrounded pharmacy at that time for the return of which you yearn—well, if it is, all I can say in the premises was once aptly expressed by our morose friend Hamlet, "Get thee to a nunnery," or perhaps I might suggest as an amendment, to Matteawan—but, pardon me, not being much stuck on things modern, our complainant may prefer the nunnery for a place of retirement from the alleged ills that have driven pharmacy to the "demnition bow-wows."

Personally, I am not allowing any sleep to get away from me through worrying over the fact that old-time pharmacy, as I knew it, has gone glimmering down oblivion way. My prayers do not ascend, nor my tears descend, for a return of those aches that were mine for days after having turned the crank on the old drug mill in an effort to reduce obstreperous roots to a proper degree of fineness. With but a slight effort of memory there comes back recollections of many periods of a singing in the ears, somewhat after the sensation one experiences after having taken a big dose of quinine, succeeding several hours spent in pounding with a ponderous pestle, some three feet long and built in proportion, in an iron mortar, valerian root that persistently refused to respond to the treatment. And then there comes back to me the ill-will manifest toward me from all the ladies in the whole building who were sniffing their pretty noses over the nasty smell for a week after. Sometimes, I admit, my mind does sort of casually wander back to the old home pharmacy of my youth, and I recall the joy that thrilled my bosom after a whole week spent in the pursuit of such happiness as was mine to extract from such labors, when the boss, sans even the phantom of a smile of appreciation for the—to my mind—excellence of its results, placed in my eager hands the six dollars per that represented my share of the seven days' business activity.

Am I one of those disgruntled souls who sigh for the return of the old home pharmacy? Well, not so loud that the noise would wake the baby.

And even in those semi-barbarous times in pharmacy the American Pharmaceutical Association was actively engaged in fostering advancement, and most of the good that has come about is due to its earnest efforts to enthuse the pharmacist to a due sense of his importance and the necessity for him to wake up and shake off his lethargy.

At the Boston meeting I presented before the Commercial Section a paper under the title, "Business Hints from the Department Stores," in which I endeavored to make it plain to the densest mind how pharmacy could be made a better and more productive calling were we to adopt some of the methods that obtain in establishments where real live interest is centered upon making the business pay a profit.

It was not in my mind in the writing of that paper that any one pharmacist could adopt all the suggestions contained therein and apply them to his own business. I did think, however, that there could not possibly fail to be found some one or more of the many ideas advanced that could with profit be adopted by every man who owned a drug store and who wanted to make it pay better. It affords me great satisfaction to be able to state that many men have taken the time and trouble to tell me personally, others to write me, that they were grateful

for the story told in that paper from which they had received much that was of lasting benefit in the conduct of their drug stores.

We do not all see things in the same perspective, however, and all the comments have not been of the appreciative order—some fellows thought that the writer of that paper in expecting them to adopt its suggestions must be sadly in need of an injection of brain culture serum. In fact, one man hailing from the Pacific coast made use of these cynical words in quite a long article written to one of the drug journals, commenting upon my business hints:

“Is it logical to assume that a druggist with only \$2,000 investment can adopt the same business methods as one with \$25,000 investment? Because the latter can use a \$280 cash register to advantage, is that a reason why the former should invest part of his \$2000 in a \$280 cash register? He may do it and succeed, but—*emphatically*—there is neither sense nor science in it. It is merely a bluff and he won out.”

Now, that view of the situation is surely about as narrow as one can conceive of—and simply goes to show how very badly some pharmacists stand in need of an awakening. But there is more to follow, and of a character that makes one whose outlook upon business has not had the effect of convincing him that honesty and fair dealing among business men is a lost art, which to assume as a condition that really exists seems to be the attitude of the writer whose utterances is here being quoted, when as a matter of fact it is merely a reflex of his own narrow, jaundiced and extremely unfortunate frame of mind. Think of any right minded business man being willing to sign his name to such a resume of modern business methods as this:

“The fact that large established houses do a strictly honest and honorable business means *only* this: that they have arrived at that stage of their business career when honesty is the best policy. Those who adopt that policy in the beginning of their career may never hope to do a large business, for business and ethics are incompatible—one may eke out a living by strictly adhering to the Golden Rule, but—that isn’t business.”

I do not know whether the man who deliberately penned such a dangerous statement for the eyes of young men to read, their brains to absorb and in their yet to come business life adopt as a guide, is a member of the American Pharmaceutical Association or not, but I earnestly trust that he is not.

But there was only one such man in all this good country of ours that gave expression to such an anarchistic utterance, for which glad consummation let us all join in a prayer of gratitude to Him who rules over the destinies of men.

Most comments were more appreciative of the objects and purposes that prompted the writing of “Business Hints.” The less jaundiced view of the paper and the results hoped for in the spreading of its doctrines will be found in this message from one whose position of Instructor in Commercial Training in one of the oldest Colleges of Pharmacy in the United States is a fair type of many expressions from men who know what is needed to make those who follow after

us better business men and more pronounced successes, both commercially, professionally and ethically, in pharmacy:

"I have just read your Business Hints. They are dandies. It is the best thing I have ever read along that line. A lot of the 'old timers' will never wake up, but such preaching will help convert many."

While pharmacy is and always will be a profession, yet the conducting of a modern drug store is and always will be a business. The fact that men of large capital are ready and willing to invest their money in corporations having for their object the placing of drug stores in prosperous communities, is surely *prima facie* evidence that the business is not looked upon by any means as a decaying industry. When men with a keen sense of what constitutes a good investment, willingly sign a long lease for a store room in which to engage in the drug business, the annual rental for which is \$100,000, would scarcely seem to indicate that there is no money in the business when conducted along live lines. No line of business that is regarded as a decaying industry ever attracts capital.

When I made the statement that the drug business is not what it used to be, it can only be based upon what my knowledge of the business consists of, and I can only have definite knowledge of the conditions surrounding my own store, hence when I reach the conclusion that the drug business is going back and is no longer worth while bothering with, I simply voice what my own drug business has taught me. The cause, therefore, is not far to seek. Look it up.

It is not the old home, meaning the pharmacy, that has lost its attractiveness; the changes there are all to the good; conditions under which the modern druggist labors are far and away better in every respect than they used to be. It is much less laborious than in those "good old times," for the return of which some men yearn, but to which were they suddenly transported, they would be scared blue.

No, glory be, the old home is not what it used to be.

Now listen to the conclusion of the whole matter as summed up before the Massachusetts State Pharmaceutical Association by E. O. Engstrom, whom many of you know, and who does not claim to be anything but a plain, hard-headed man who does not bother about what the other fellows are doing, but simply keeps his wits centered upon his own pharmacy and makes it a success by doing so:

"I believe if we watch our business, and take care of it, and see that our profits come sufficiently to cover our expenses and a little besides, we will find that pharmacy will come to its own, and I think it is already coming, and we will be able to take care of all conditions that may arise. If you own your own store, you do not need to worry over any of the syndicate stores."

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

THE CHAIRMAN'S ADDRESS.

OTTO RAUBENHEIMER, BROOKLYN, N. Y.

There is much more to pharmacy than the dispensing of drugs, the preparation of galenicals, the compounding of prescriptions and incidentally the sale of soda water, cigars, candy and postage stamps. There is a fascinating field of study, which shows the pharmacist the growth and development of his beloved profession, namely, the study of the history of pharmacy.



OTTO RAUBENHEIMER, CHAIRMAN.

The writer even goes so far as to make the bold statement that in order to truly love his profession, the pharmacist must necessarily be acquainted with its history.

Our A. Ph. A. is celebrating its sixtieth anniversary at the Denver Convention. Three score of years of fruitful work have passed, and during this time our A. Ph. A. has been one, if not the greatest, factor in the uplift and development of pharmacy from a mere trade to a profession, which is on equal footing with medicine. Truly a record to be proud of!

In connection with this sixtieth anniversary your Chairman of the Section on Historical Pharmacy considers it his privilege and also his duty to give a short

recapitulation of the history of the Section which at the same time celebrates its decennial anniversary. Besides this, I will endeavor to present a resumé of a great many newer historical events which should be recorded in the archives of the A. Ph. A.

HISTORY OF THE SECTION ON HISTORICAL PHARMACY, 1902-1912.

The great and general interest in the History of Pharmacy manifested at the Semi-Centennial Jubilee of the A. Ph. A. at Philadelphia in 1902, resulted in the appointment of a Committee on Historical Pharmacy, consisting of Prof. Edward Kremers as chairman, and E. J. Kennedy as secretary. The excellent report of this Committee, presented at the Mackinac Island, Mich., meeting in 1903, can be found in Vol. 51 of the Proceedings, pp. 531-542, and should be read and studied by all members interested in the history of pharmacy. The second report of this Committee was given at the Kansas City, Mo., meeting in 1904, and contains a very valuable compilation of a "*Bibliography of American Pharmaceutical History*." Proc., Vol. 52, pp. 428-430. By the establishment of a *Section on Historical Pharmacy* in 1904, with our beloved Albert E. Ebert as chairman, the recording of pharmaceutical history has taken a definite form in the A. Ph. A., and the yearly transactions can be found in the Proceedings.

As a matter of record and convenience, I have compiled a list of the officers of the Committee and the Section on Historical Pharmacy since their existence:

COMMITTEE ON HISTORICAL PHARMACY.

1902-1904 Edward Kremers, Chairman, and E. J. Kennedy, Secretary.

SECTION ON HISTORICAL PHARMACY.

CHAIRMAN.	SECRETARY.	HISTORIAN.
1904-1905—Albert E. Ebert.....	Caswell A. Mayo.....	Edward Kremers
1905-1906—John F. Hancock.....	C. S. N. Hallberg.....	Edward Kremers
1906-1907—Ewen McIntyre	Eugene G. Eberle.....	Edward Kremers
1907-1908—Edward V. Howell.....	Eugene G. Eberle.....	Edward Kremers
1908-1909—John B. Bond.....	Eugene G. Eberle.....	Edward Kremers
1909-1910—Eugene G. Eberle.....	John A. Dunn.....	Edward Kremers
1910-1911—Jos. L. Lemberger.....	Otto Raubenheimer....	Edward Kremers
1911-1912—Otto Raubenheimer	Caswell A. Mayo.....	Edward Kremers

BIBLIOGRAPHY.

Besides the excellent list of reference works on the history of pharmacy, chemistry, materia medica and medicine by one of our late members, Dr. Friederich Hoffman, published in the Proceedings, Vol. 52, pp. 462-464, your Chairman, a book-worm, by the way, begs leave to present an additional list, arranged in chronological order:

Dr. August Hirsch, Biographisches Lexikon der hervorragenden Aerzte aller Zeiten und Völker. 6 Volumes, 1884-1888. Urban & Schwarzenberg, Wien.

B. Reber, Gallerie hervorragender Therapeutiker und Pharmakognosten der Gegenwart. 1987; Paul Dubois, Geneve.

Sir Edward Thorpe, Essays in Historical Chemistry. 1902. MacMillan & Co., New York and London.

Herman Schelenz, Geschichte der Pharmazie, 904. Julius Springer, Berlin.

Ernstoon Meyer, History of Chemistry, from the earliest times to the present day. Third Ed. 1906. English by George McGowan, MacMillan & Co., New York.

Dr. Franz Strunz, Ueber die Vorgeschichte und die Anfänge der Chemie, 1906. Franz Deuticke, Leipzig.

Prof. J. Berendes, *Das Apothekenwesen*. 1907. Ferd. Enke, Stuttgart.
Sir Edward Thorpe, *History of Chemistry*, 2 Vol. 1909. G. P. Putnam's Sons, New York.

Dr. David Allyn Gorton, *History of Medicine, Philosophical and Critical*, 2 Vol. 1910. G. P. Putnam's Sons, New York.

A. C. Wooton, *Chronicles of Pharmacy*, 2 Vol. 1910. MacMillan & Co., New York and London.

Herman Peters, *Aus Pharmazentischer Vorzeit, in Wort und Bild*. Third Ed. Vol. I. 1910. Julius Springer, Berlin.

Dr. James J. Walsh, *Makers of Modern Medicine*. 1910. Fordham University Press, New York.

T. P. Hilditch, *A Concise History of Chemistry*. 1911. D. Van Nostrand Co., New York.

Max Neuburger, *Geschichte der Medizin*. 1911. Ferd. Enke, Stuttgart.

Dr. James J. Walsh, *Old Time Makers of Medicine*. 1911. Fordham University Press, New York.

A. Tschirch, *Handbuch der Pharmakognosie*, Vol. I, Part 1 and 2 and Vol. II, Part 1. 1909-1912. Chr. Herm. Tauschnitz, Leipzig.

The latter, although not strictly a historical work, is included in this list, because it contains the history of Pharmacognosy or pharmacohistoria in Vol. I, Part 2, and also the history of each drug in its respective monograph.

The extensive library of the writer contains these works and he will be more than pleased to be of help to his fellow-pharmacists, especially in their historical studies.

LITERATURE.

The number as well as the quality of historical papers during the fiscal year 1911-12 has been quite large. Hermann Schelenz, the German pharmacist and historian and author of the *History of Pharmacy*, quoted above, excels in this line, and I call special attention to his following papers: "Shakespeare Studien," showing his knowledge of pharmacy and medicine, read before the Section of History of Medicine and Natural Sciences of the *Deutsche Naturforscher* at their eighty-third annual meeting at Karlsruhe, September 24-30, 1911.

"Erfindung des Rückflusskühlers (Invention of the Reflux Condenser), *Chem. Ztg.* 1911. 416.

"Geschichte der Potio Riverii" (History of Liquor Sodii Citratis), *Ph. Zhalle*, 1912. No. 8.

Another very productive authority on historical subjects is Prof. Dr. Edmund O. von Lippmann, the author of the "History of Sugar," who contributed the following paper to the Section of History of Chemistry of the *Verein Deutscher Chemiker* at the Freiburg meeting: "Geschichte des Alkohols und Seimens Namens (History of Alcohol and of Its Name), *Ztsch. Ang. Chem.* 1912. No. 23, p. 1179.

Among the other numerous historical papers in foreign journals I beg to call the attention of the chemist and the pharmacist as well to Diergart: *Ein Wort zur Wertung der Geschichte des Chemie* (One Word on The Value of History of Chemistry), *Ztsch. Ang. Chem.* 1911. No. 44, p. 2103.

P. Martell: *Geschichte der Chemischen Industrien Oesterreichs* (History of the Chemical Industries in Austria), *Chem. Ind.* 1911, p. 205.

The literature on pharmaceutical history in the United States is equally as im-

portant. Above all, let me call your attention to the excellent "Memoirs of An American Pharmacist," by one of our once very active members, the late James Winchell Forbes, which are published in monthly installments in The Midland Druggist and Pharm. Review. In connection with the sixtieth anniversary of the New Yorker Deutscher Apotheker Verein, the history of the society was published in its official organ, the Deutsch-Amerikanische Apotheker Zeitung of October, 1911.

I must not forget to mention the many valuable papers read and presented at the Boston meeting and printed in the JOURNAL under Section on Historical Pharmacy. The Branches of the A. Ph. A. have also taken an interest in this work, as shown by the three papers on the "History of Pharmacy in Minnesota," by Prof. Fred J. Wulling, read at the June, 1912, meeting of the Northwestern Branch; "History of Cork," one of our daily commodities, by your chairman (Journal A. Ph. A., April, 1912), and "The History of Ointment Bases," by Dr. Eugen Unna (Journal A. Ph. A., July, 1912), the last two being read before the New York Branch. The United States is fortunate in having one of the best authorities on ancient medicine and pharmacy as one of its present residents, namely, the assyriologist and egyptologist, Dr. Felix von Oefele, a member of the New York Branch of the A. Ph. A. One of the recent historical papers from his pen is "Abyssinean Superstition in Gynecology," in Am. Medicine, June, 1912, p. 325, which is well worthy of attention, even by pharmacists.

ANNIVERSARY OF PHARMACEUTICAL AND CHEMICAL ASSOCIATIONS, 1910-1912.

On September 4, 1910, the old and honorable Société de Pharmacie d'Anvers celebrated its seventy-fifth anniversary, at which a number of pharmacists were elected as corresponding and honorary members, Professor Remington being among the latter. A report of this anniversary can be found in Comptes Rendu due Xme Congrès International de Pharmacie à Bruxelles, 1910, pp. 385-389.

In October, 1911, the New Yorker Deutscher Apotheker Verein, the oldest pharmaceutical society in the United States, celebrated its sixtieth anniversary in true German fashion, by a ball with ladies and by a "kommers" with beer. At the latter event two prominent men in the A. Ph. A., namely, Professor Remington and Professor Lloyd, and also the present president of the A. M. A., Dr. Jacobi, were elected as honorary members.

On November 9, 1911, the Allgemeine Oesterreichische Apotheker Verein celebrated its fiftieth anniversary. An illustrated book of 65 pages was published for this occasion, containing the history of the association, its pharmacy school, its chemical, bacteriological and its food laboratory, and its Journal, the Zeitschrift des Allgemein. Oesterreich. Apotheker Vereines.

The Verein Deutscher Chemiker celebrated its twenty-fifth anniversary at Freiburg on May 29-June 2, 1912. Is it not a strange coincidence that phenacetin was recognized as an antipyretic at Freiburg and that sulphonal was discovered and proven to be a hypnotic by Prof. E. Baumann at this very same university town where the German chemists celebrated their silver jubilee. The New York Section of the Verein Deutscher Chemiker will celebrate the anniversary of the society on August 31-September 2, 1912.

In June, 1912, the Association of Druggists (not pharmacists) of Alsace-Lor-

rairie celebrated their tenth anniversary at Strassburg and published on this occasion a book by H. Hofstetter, containing not only the history of the society, but also of Alsace-Lorraine and of Strassburg, etc.

With the present meeting in Denver the A. Ph. A. has reached the age of sixty years, three score of years of hard but fruitful work for the benefit of professional pharmacy.

INTERNATIONAL CONGRESSES OF PHARMACY.

The tenth International Congress of Pharmacy was held at Brussels on September 1-5, 1910. Practically all countries were represented by delegates and membership. It is a pleasure for me to state that quite a number of members of our A. Ph. A. were elected as honorary or corresponding members of the congress. As a matter of record I herewith give a tabulation of the International Congresses of Pharmacy thus far held:

- | | |
|---------------------------------|-----------------------------|
| I. Braunschweig, Germany..... | September 15-17, 1865 |
| II. Paris, France..... | August 21-24, 1867 |
| III. Wien, Austria..... | August, 1874 |
| IV. St. Petersburg, Russia..... | August, 1874 |
| V. London, England..... | August 1-3, 1881 |
| VI. Bruxelles, Belgium..... | August 31-September 6, 1885 |
| VII. Chicago, U. S..... | August 21-23, 1893 |
| VIII. Bruxelles, Belgium..... | August 14-19, 1897 |
| IX. Paris, France..... | August 2-8, 1900 |
| X. Bruxelles, Belgium..... | September 1-5, 1910 |

ANNIVERSARY OF UNIVERSITIES AND COLLEGES.

The University of Berlin celebrated its centennial in 1910 and Prof. Dr. H. Thoms, director of the Pharmaceutical Institute of the University, published an illustrated book of 134 pages, showing the development of pharmacy during these one hundred years and giving a very complete description of the up-to-date, modernly equipped pharmaceutical college. In connection with this it is but fair to mention that the centenary of the oldest College of Pharmacy in the United States, that of Philadelphia, will take place in 1921, and that a committee is already at work now so as to arrange for the proper celebration of this important historical event.

To all these associations and colleges and congresses the chairman of the Historical Section of the A. Ph. A. and its members wish a hearty

"Vivat, crescat, floreat!"

ANNIVERSARY OF JOURNALS.

With the close of 1906 the Druggist Circular completed its fiftieth year. In January, 1907, the Golden Jubilee number was published, which contained a biographic sketch of the journal, and among others the following historical essays:

- Fifty Years of Battling for Pharmacy Reform, by Dr. Eccles.
- Fifty Years of Pharmacy, by Prof. Remington.
- Fifty Years of Chemistry, by Prof. Scoville.
- Fifty Years of Materia Medica, by Dr. Rusby.
- Fifty Years of Pharmaceutical Teaching, by Prof. Kremers.

In 1909, the Journal de Pharmacie et de Chimie, of Paris, reached the venerable age of 100 years. On this occasion the editor, Prof. Emile Bourguelot, published

a booklet illustrated with 32 portraits, "Le Centenaire du Journal, 1809-1909," *Histoire du Journal et Notices Biographiques*."

On July 1, 1909, the Golden Jubilee number of the *Pharmazeutische Zentralhalle* appeared containing a reproduction of the very first page of July 7, 1859, with an article on Trimethylamine, by Hermann Hager, its founder and editor and master of pharmacy at that time. Hermann Schelenz, the German pharmaceutical historian, wrote the "Werdegang" of the "Zentralhalle," which is published in the jubilee number.

The "Chemist and Druggist" of London, published its Jubilee number and Summer Issue on July 31, 1909, together with a replica of the first number of September 15, 1859. The reading matter, the advertisements and the price current, f. i. Quinine Sulphate 1 oz = 7s. 3d., in this "replica" are certainly very interesting. The "Jubilee Number" gives a complete history of the "Chemist and Druggist" from 1859-1909 and is well illustrated.

In 1910 the "Apotheker Zeitung," of Berlin, the official organ of the Deutsche Apotheker Verein, reached the age of 25 years, and the "Sueddeutsche Apotheker Zeitung," of Stuttgart, became 50 years old.

In 1911 the "Zeitschrift für Analytische Chemie" celebrated its Golden Jubilee and published photoengravings of Prof. Remigius Fresenius, its founder in 1861, H. and W. Fresenius and E. Hintz, the present editors.

As a matter of record I herewith also give the age of several other foreign pharmaceutical journals in 1912:

Journal der Pharmazie für Elsass-Lothringen.....	39 years
Pharmazeutische Post, Wien.....	45 years
Pharmazeutische Zeitung, Berlin.....	57 years
British and Colonial Druggist, London.....	62 years
Pharmaceutical Journal, London.....	71 years

CENTENARY OF CELEBRATED PHARMACISTS, CHEMISTS AND BOTANISTS—ANNIVERSARY OF IMPORTANT DISCOVERIES.

These are two very important subjects and in order to do them justice your chairman promises you a paper on each for next year's Historical Section. I can, however, not let this occasion pass without reminding you that just about one hundred years ago marks the beginning of the discoveries of our important alkaloids.

Your chairman has presented this somewhat lengthy, but nevertheless condensed, resume with the chief aim of proving the desirability, in fact necessity, of the

KNOWLEDGE OF PHARMACEUTICAL HISTORY.

That scientists, old and new, hold this view is shown by the following abstracts:

Ferdinand Hoefer, in the introduction to his still valuable "Historie de la Chimie," 1842, states: "I have always thought that the best method of popularizing scientific studies consists in presenting, as in a panorama, the different phases a science has passed through from its origin to its present condition."

Wilhelm Ostwald, the pioneer in the field of physical chemistry, makes the following statement of the importance of historical studies for the understanding of the science: "There is no more effective means of vivifying and deepening the study of a science than to *saturate one's-self in its history*."

The paper by Diergart, "Ein Wort zur Wertung der Geschichte der Chemie," above referred to under literature, can well be applied to the value of pharmaceutical history.

In the opinion of your chairman, there are many signs that, among the rising generation, there is an increase of the historical sense with regard to the sciences and quite especially to chemistry and pharmacy.

INCLUSION OF PHARMACEUTICAL HISTORY IN THE CURRICULUM OF OUR COLLEGES.

Above all it is the duty of the pharmacy schools and colleges to include pharmaceutical history in their curriculum, and thus plant into the student the seed which will germinate and give him a knowledge of the history of pharmacy and thereby increase his love for the profession.

At the convention of the German Naturalists and the Association for History of Medicine and Natural Science, at Koenigsberg, in 1910, Dr. S. Guenther, of Munich, made the very true statement that the study of history of a science which is generally considered a learned sport is chiefly intended for beginners. He referred to the former lectures by Poggendorff on the history of physics, by R. Wolf on the history of astronomy and by Cantor on the history of mathematics. He deplored the fact that the study of the history of sciences is not practised to a greater extent. The associations resolved to ask the faculties of the German Universities that questions on the history of the different branches of natural sciences should be included in the examinations, and furthermore that for this purpose a course of special lectures should be given.

Your chairman in his enthusiasm believes that such measures should also be adopted in the United States and that a similar recommendation should be made by the Section on the History of Pharmacy of the A. Ph. A., the first pharmaceutical association in the entire world which has established and successfully maintained such a section. I might point out that chairs on the history of chemistry have been established at the Universities of Berlin, Heidelberg, Erlangen, Dresden, Vienna, Basel, Berne, Riga, Christiania.

Therefore why not follow this good example in pharmacy? Thus far one college of pharmacy, the one connected with the University of Wisconsin, has given a series of lectures on the history of pharmacy from the ancient times to the present condition in the United States and elsewhere. Professor Kremers, our Historian, is certainly to be complimented on this innovation!

In the opinion of your chairman even a few extra lectures on pharmaceutical history in the junior, senior or graduate course would greatly aid to give the student a better understanding of the origin and the development of his profession.

USES OF PHARMACEUTICAL HISTORY.

Pharmaceutical history by no means is a "dead" knowledge, like Greek or Latin, but can be utilized daily in pharmacy, not only theoretically but also practically. To illustrate this I beg to present the following as written on a prescription only a few days ago:

"Sulph. Alkal. Jesuit."

Without a little knowledge of the history of cinchona or "Jesuit's bark" it would be impossible to decipher; this synonym as the sulphate of the alkaloid of cinchona or in other words "*quinine sulphate*."

Hundreds of other similar examples might be given, showing the necessity of historical knowledge in the routine of pharmacy. And from a commercial point of view I beg to point out my paper, "Pharmaceutical Window Displays," read at the Boston meeting and published in the *Journal A. Ph. A.*, August, 1912, p. 866, showing that even a limited knowledge of pharmaceutical history can be utilized to a great advantage by the pharmacist in preparing interesting window displays, displays which are educational, displays which must necessarily impress the public as well as the medical profession, displays which are bound to raise the estimation and confidence in the pharmacist and improve his standing in the community.

How interesting historical events in pharmacy are can be seen by the "Retrospect of Fifty Years Ago," in the *"Chemist and Druggist"* and "Reprinted Seventy Years Ago" in the *"Pharmaceutical Journal."*

HISTORICAL COMMITTEES OF THE BRANCHES.

As far as your chairman can learn none of the Branches of the A. Ph. A. have a "Committee on Historical Pharmacy," which however is equally as important as the other committees. The Philadelphia College of Pharmacy holds the record of having a historical committee which, in February, 1908, published an illustrated 40-page brochure, "The Faculty of the P. C. P."

Thus far two State Associations have historians which are doing good work, namely, Mr. Edw. A. Sayre, of New Jersey, and Miss Lum Shipe, of Texas.

VETERAN TEXAS ASSOCIATIONS.

In a recent postal card received from friend Bodemann he asks, "Why has the A. Ph. A. a Historical Section?" He seems to think that by the establishment of veteran druggists' associations we could do without the Historical Section. While your chairman admits that the Chicago Veteran Druggist Association has done splendid historical work since 1898, he cannot subscribe to Bodemann's idea, but believes that Veteran Druggists' Associations should be formed in different parts of the United States and should help and work in harmony with the Historical Section of the A. Ph. A. More about Bodemann's "Veteran Associations" can be found in *Proc.*, Vol. 58, p. 1294.

PHARMACEUTICAL COLLECTIONS AND MUSEUMS.

The oldest collection of drugs, and drugs from the "new world" was the museum at Sevilla by the Spanish physician, Nicolas Monardes, in 1554. Among the many pharmaceutical museums, especially those of Berne and Zurich, in Switzerland, I also beg to point out the one of the Allgemeine Oesterreichische Apotheker Verein, in Vienna, which was started in 1864, and contains many curiosities. The Germanic Museum, in the old historic city of Nuremberg, the home of the first modern pharmacopoeia or dispensatory, namely, by Valerius Cordus, must not be forgotten. Through the efforts of the historian Hermann Peters the Deutsche Apotheker Verein appropriated the sum of 500 marks annually for 10 years. With this fund, together with collections by other pharmaceutical societies, a historical "apotheker" was erected in the museum, which holds a world-wide reputation. In the United States we have the National Museum at

Washington, which contains a large drug and plant collection, which should be of special interest to pharmacists. Let us hope that in the near future our A. Ph. A. will have a home of their own, in which the archives and historical collections will be safely housed.

LIBRARIES.

It is generally admitted that the library of the average druggist and also pharmacist is a disgrace. And even some of our pharmacy schools can be censured. But other colleges of pharmacy, and I point out Philadelphia and New York as models, are to be highly commended. It should become better known among pharmacists that we have one of the finest and largest libraries in the world in the United States, namely, the Lloyd Library in Cincinnati. This is devoted exclusively to a library of botany and pharmacy and pharmacists should make use of the generous offer of Professor Lloyd to obtain information on these subjects, gratis. The Lloyd Library at present is publishing an index catalogue of the works on botany.

CONCLUSION.

This rather lengthy address has the main object of arousing more interest in the Section and also to prove that pharmaceutical history is not well-nigh forgotten. The collection of a vast amount of material gathered all over the United States is of great importance and should be made a special feature of the Section. And besides this, our foreign members should be asked to contribute to the Historical Section.

Your chairman, with the aid of the other officers of the Section, has prepared a program which he trusts will please the members. To my greatest regret I am unable to arrange my business affairs in such a manner so as to be with you at the Denver meeting and take an active part in the discussions.

This being the decennial anniversary of the Section, I have prepared ten recommendations, which I herewith submit:

RECOMMENDATIONS.

1. The papers of the Section should be published in the JOURNAL A. Ph. A., as by such publicity greater interest will be aroused in historical pharmacy.

2. The Historian should be asked to prepare an index of the material which has accumulated during the 10 years of existence of the Section, and a reasonable sum should, of course, be appropriated for the clerical work.

This index should be kept up-to-date by adding the contributions each year in alphabetical order.

3. The incoming officers should communicate with the local Branches, as to appoint a Historical Committee in each Branch and thereby help to collect material and to write up the history of Associations, Boards, Colleges, etc.

4. They (incoming officers) should also be asked to enter into correspondence with the State Pharmaceutical Associations and recommend the appointment of a Historian for each state.

5. It is the sense of this Section that pharmaceutical colleges be asked to include pharmaceutical history into their curriculum.

6. The correspondence of the office of the President, as well as other officers, should be transferred to the Historian, so as to be preserved in the archives. This innovation was created by President Eberle at the Boston meeting, 1911.

7. Arrangements should be made with the present and the former pharmaceutical members of the Council of Pharmacy and Chemistry of the A. M. A., so that upon their death the bulletins of the Council should be transferred to the archives of the A. Ph. A. These bulletins will, in future years, give a deep insight into American pharmacy that will be unobtainable in any other way. My thanks are due to Professor Puckner, who made the excellent suggestion.

8. Veteran Druggists' Associations should be established in the larger cities, as they would be specially helpful in preparing biographies of the members.

9. Two sessions of the Historical Section should be held and at the evening session an illustrated historical lecture should be given as inaugurated by Professor Kremers at the Boston convention.

10. In order to obtain the names of the members who are interested in the Historical Section a membership list should be compiled.

I trust that these recommendations will be duly considered and to some extent enacted, so as to make the Historical Section of the A. Ph. A. a lasting success and thus prove that even in this age of commercialism there is more to pharmacy than theory and practice, namely, its history, and that after all

"The history of a science is the science itself!"

Brooklyn, N. Y., August 10, 1912.

Contributed and Selected

DETERMINATION OF ALCOHOL IN TINCTURE OF IODINE.

AZOR THURSTON AND A. N. THURSTON.

As heretofore published¹ methods proposed for determining alcohol in tincture of iodine are very unsatisfactory, mainly owing to the time necessary for inversion of iodine with mercury as suggested by Alcock² or with iron filings or zinc as proposed by Roscoe & Schorlemmer³.

The writers propose to fix the free iodine with sodium thiosulphate and then add sodium hydroxide to neutralize the sulphurous acid that may be formed when distilling. This procedure has the advantage of being rapid and giving practically accurate results.

The details are as follows: Decolorize 50 cubic centimeters of the tincture with a saturated solution of sodium thiosulphate, add 5 cubic centimeters saturated solution of sodium hydroxide and a few pieces of pumice to prevent bumping. Distill until all the alcohol comes over and make up the distillate with water to 100 cubic centimeters. Determine the alcohol in the usual manner with a pycnometer. Multiply the percentage of alcohol obtained by two and the result will be practically the percentage of absolute alcohol in the tincture.

Tincture of iodine prepared with alcohol of official strength should contain close to 92 per cent. of absolute alcohol by volume, as the iodine and iodide of potassium replaces from 3 to 4 cubic centimeters of alcohol in each 100 cubic centimeters of the finished product. There is, also, a difference in the temperature at which the tincture is prepared and that at which the alcohol is generally determined, therefore we think a tincture containing 90 to 91 per cent. of absolute alcohol by volume, should not be considered adulterated.

Grand Rapids, Ohio, Sept. 7, 1912.

A RAPID ACCURATE METHOD FOR THE QUANTITATIVE ESTIMATION OF CHLOROFORM IN CHLOROFORM LINIMENT.*

JOSEPH L. MAYER.

A member of the Revision Committee of the Pharmacopœia, recently called my attention to the advantage of making official a method for the quantitative determination of chloroform in chloroform liniment, and the lack of a published process for the same.

¹Jr. Ind. and Eng. Chem., Vol. 1, 789. Merck's Report, Vol. 19, 35.

²Proc. A. Ph. A., 1904, 583.

³Treatise of Chemistry, Vol. 1, 157.

*Read before the New York State Pharmaceutical Association, June 25, 1912.

The subject being an important one, I began experimenting with the object in view of evolving a method whereby the pharmacist could easily and accurately make the estimation.

A method, which at first gave promise of yielding satisfactory results, was to precipitate the chloroform out of the liniment by means of 10 per cent. ammonium hydroxide, and while the results obtained were satisfactory when the sample was of U. S. P. strength, when the quantity of chloroform contained in the liniment was less than 25 per cent. or more than 30 per cent., the results were too far from the truth to be of value. The method was therefore abandoned. An effort to throw out the chloroform by means of centrifugal force did not yield concordant results.

It soon became apparent that the soap in the liniment was the disturbing factor, and that to obtain satisfactory results it was necessary to distill the chloroform. Remembering this fact, the following method was devised:

Into a test-tube having a capacity of about 85 cc. and about 24 mm. in diameter, place 10 cc. of distilled water and 10 cc. of liniment to be analyzed, accurately measured with a pipette; to prevent bumping, a small piece of pumice stone which has previously been heated to white heat and thrown into water, is added. The test-tube is connected with a Liebig condenser by means of corks and bent tube. For a receiver use an accurate 25 cc. cylinder graduated in tenths or fifths of a cc., containing 5 cc. distilled water. It is not necessary to have the condenser tube come in contact with the water. All that is required is to have it project into the cylinder. It is easy to know when the chloroform is all distilled by watching the receiving cylinder. As the chloroform distills it sinks to the bottom and then comes a lighter distillate, which remains on top and is perfectly clear, and then a distillate which forms a milky layer occupying about 1 cc.; after this turbid zone has appeared, remove the cylinder; stopper it with a sound cork and mix by shaking thoroughly; then remove the cork and add diluted sulphuric acid (10 per cent.) to the 25 cc.; mark and shake thoroughly. In a few moments the chloroform will have settled to the bottom in a clear layer, and all that remains is to multiply the cc. of chloroform by 10 to obtain the percentage of chloroform in the sample. The entire operation does not require over fifteen minutes.

The results obtained on a large number of samples of known but varying strengths, proved the method to yield such very accurate results that should the Revision Committee decide to make official a method for the quantitative estimation of chloroform in chloroform liniment, it is suggested that they adopt this one.

Of course, a description of the method for use in the Pharmacopœia could be very much shortened, as I have purposely gone into detail in describing it.

In view of the accuracy of results, ease of application, and simplicity of apparatus, the method has everything to commend it.

I would take this opportunity of acknowledging my indebtedness to my assistant, Mr. I. Schwartz, for valuable aid rendered in connection with the work.

FUSSY ADMINISTRATION.¹

President McKinley handed Colonel Roan a message to carry to Garcia. There were no strings tied to that commission. He had chosen a man of intelligence, resource and ability to do a job and he was willing to let him do it in his own way. This very fact proved that the President was a great executive. He knew how to centralize responsibility and how to hand out a message to a messenger, an art which many men in administrative positions have not yet acquired.

Probably the most fussy and inefficient form of administration ever invented is the committee system. Committee administration does not exist in approved business organizations, but it appears to be the preferred system in society, public and academic administration.

Questions of business policy, plans for manufacturing development, technical or educational problems all require discussion, consideration and analysis. The experience and knowledge of a number of men working in cooperation is required to determine these matters of general policy. Such questions are properly and efficiently handled by a representative committee selected with a view to reaching a correct and lasting solution. With the solving of these problems and the fixing of a policy for the future administration of the organization their duty should end. It is when this big, unwieldy committee engages in the consideration of nursery problems or attempts to function as an administrative body, that it becomes ridiculous. It has repeatedly been demonstrated that the administrative efficiency of a committee varies inversely as the square of the number of men on the committee. It is well known that business administration is much more efficient and prompt than public, society or academic administration, and the reason, is to be found, to a large extent, in the complete freedom of business administration from a triangular or pentagonal committee attempting to make a job for itself out of the duties of a reliable man. Suppose we take a specific case: An office boy in a well managed business may ask for an increase in salary because he has reasoned out that he is rendering service which will justify it. He goes to the chief clerk who is his immediate superior and is therefore the logical person to control such matters and through such control is enabled to exercise a discipline which puts a premium on efficiency. The chief clerk knows the value of the boy's services, considers all of his arguments and makes a decision one way or the other. If the request is granted, the paymaster is instructed as to the agreement and when it is effective. Total time consumed, about five minutes. Suppose this same boy is working for a committee-mad organization and makes an application for more salary. He is usually advised to "write a letter" covering all points to be considered. The letter is brought up at the next meeting of the board of directors. In order to "save time," after being duly moved, seconded and discussed, the matter is referred to a committee of three or five, to be appointed by the chair, to consider and report at the next meeting on the question of salary for office boy. The committee on office boy's salary is made up of busy men and they find it difficult to get together; it will be a miracle if they do not come in at the next board meeting and report "progress."

¹Journal of Industrial and Engineering Chemistry.

In the meantime the boy has become discouraged and has reduced his services to a value comparable with his salary or has obtained a new job at a better salary on account of the knowledge and experience gained while employed by the committee-ridden organization. Running a training school for employees who leave as soon as they have learned enough to be valuable is a discouraging operation at best: such a system of filtration, in which the values all go to the filtrate, will, in an incredibly short time, leave a residual organization which will blunder along with a maximum of inefficiency.

Speed is an important factor in efficient administration. How is the work of a committee going to be expedited? The chairman may call a meeting but the only result is an echo. Men are busy, too busy to be spending their time fussing over insignificant details. We have seen ten ten-thousand-dollar-a-year men sit for hours discussing, considering, and acting upon a quantity of insignificant administrative matter which could have been disposed of by one two-thousand-dollar-a-year man in one hour. Such a man, familiar with all questions of policy peculiar to this organization, would have acted with even better judgment than the committee because of a more intimate, direct, first-hand knowledge of the facts. The results would have been snappy administration and a living example of practical efficiency to the subordinates — a lesson which could not be drawn from the operations of the hundred-thousand-dollar committee. The committee men themselves often see the ridiculous waste and yet become resigned victims of a system of "fussy" administration which literally oozes with delays, procrastination, irresponsible and inefficient methods.

Most societies and institutions have at least a carload of committee reports which have been made at great expense of time and labor but which have not been read or adopted. Some offices have records — records everywhere — but no obtainable information. In other places the whole organization is busy with the administrative "double pass," where instructions are handed from one subordinate to another and everybody is busy with the system of passing orders along but no one has time to do a job.

Professional men, engineers, chemists and educators might do well to recognize administration as a profession by itself and not a side show to some specialized occupation. As a matter of fact, administrative power is the rarest of all talents and is therefore the best paid profession. We entrust our legal, technical and educational problems to men trained and experienced in their respective specialties. The proper administration of policies so established is equal in importance to, and often more difficult to accomplish than the formulation of the policies themselves. One might properly suggest therefore that the question of efficient administration is important enough to justify careful analysis.

In successful business organizations we find centralized responsibility and power in the hands of a man whose business is administration. Policies are prescribed and commissions are assigned for the purpose of having them executed, and the person who undertakes the work is held responsible for the results. Men of ability and judgment are not converted into errand boys and assigned to duty between the board of directors and the job. Technical questions and questions of policy may be considered and decided by committees but these committees are not "woodenized" by don'ts and limitations. Every man in such an organization

believes that the easiest way to dispose of work is to do it. He knows that his boss is waiting for results, not excuses. When he is told to do something he does not rack his brain for reasons and arguments as to why it should not be done, but puts some intelligence and energy into the matter of doing it. Things are accomplished in an hour, which, if undertaken at all in an organization saddled with committee administration or a fussy manager, would take six months.

Since the introduction of laboratory methods of instruction into our educational systems, men trained for numerous activities have been taught to study conditions, observe facts and interpret results. Administrators who apply this training to problems arising in the development of men and women in their organization will have less cause to complain of inefficiency. They will have more people who can carry a message. The elimination of fussy systems of administration will go a long way toward successfully dealing with the human element in efficient management.

THE COLD STORAGE INDUSTRY.

The cold-storage industry, as might be anticipated, has not escaped criticism. In some quarters it has been regarded as a menace to public health on the ground that refrigeration enables dealers to hold food-products for so long a time that they become unfit for consumption. Goods preserved by cold storage have been declared to be inferior to fresh food in quality, wholesomeness and palatability and to produce various disorders. Furthermore, it has been contended that cold storage enables speculators to withdraw food-products from the market and to force up prices to an artificial level, to the great injury of the consumer, thus becoming an instrument of monopoly.

In its relation to the health of the people and less directly in its effects on the cost of living, the cold-storage problem is of immediate interest to the medical man. At the outset it must be admitted that no serious complaints can be brought against the cold-storage warehousemen in general on the ground of unsanitary or unscientific methods of conducting their establishments. Any abuses in this respect are exceptional; and the satisfactory condition of the plants is attested by the results of governmental inspection. The other questions raised have very recently been made the subject of an inquiry by a commission appointed for this purpose by the Governor of Massachusetts. The report of its five members commands notice as the latest pronouncement on this debated topic. The commission recognizes that cold storage has become a fundamental necessity in the distribution of the food-supply of the nation, and sees its principal economic function in the fact that it enables the surplus of certain products in the season of natural plenty to be carried over to meet the demand in the season of natural scarcity. The charge that cold storage in general is detrimental to public health is refuted by an impartial examination of this subject in its hygienic aspects.

In the words of the report: "While abuses have arisen, through the holding of food-products in cold storage for unduly long periods and through the handling of foods by improper methods before and after as well as during refrigeration, the benefits that have come from the salvage of food through cold storage far outweigh any evils that have developed in this field. Cold storage has brought about an expansion and diversification of the food-supply of the population, making certain kinds of food more abundant and more accessible. It thus makes for the conservation of the vital resources of the people. The gain from this source is universal and permanent; the injuries are occasional and temporary, and can be eliminated by proper regulation."—*Journal A. M. A.*

Of General Interest

EIGHTH INTERNATIONAL CONGRESS OF APPLIED CHEMISTRY.

OTTO RAUBENHEIMER, PH. G., SECRETARY OF THE SECTION ON PHARMACEUTICAL CHEMISTRY.

The formal opening of the Eighth International Congress of Applied Chemistry took place at Washington, D. C., on September 4, at Memorial Continental Hall. Dr. W. H. Nichols, president of the Congress, opened the proceedings by calling upon the honorary president, Dr. Edward W. Morley, who expressed the cordial welcome of the chemists of the United States to the visiting chemists of the wide world, who were in attendance on the Congress, and he took an especial pleasure in welcoming the chemists from those four nations whose languages are the official language of the Congress—Great Britain, France, Germany and Italy—and in whose countries modern chemistry had its origin one hundred years ago. He named Dalton, Lavoisier, Liebig and Avogadro. The progress of chemistry in those four countries had been well worthy of those beginnings. At the time the United States had just become an independent nation—organization, civilization and general lawmaking had to take first place—pure chemistry had to wait.

He greeted with a great warmth of welcome the nations "who were thus our masters and teachers." While the debt could not be repaid, he assured the delegates that if hospitality would represent the intention they would feel America's gratitude.

On behalf of upwards of 6,000 representatives of all branches of American chemistry, and in the name of the great industrial organizations depending upon their services and teachings, he extended a hearty welcome, and emphasized the opportunity which the congress offered to the delegates of comparing notes on matters of vital interest and of adding to the sum of previous knowledge.

He expressed a word of appreciation for President Taft, saying that the Congress would find in him a worthy successor of the kings and princes who have greeted previous congresses.

Dr. Nichols mentioned the great progress of science in the last twenty-five years and said he believed chemistry had not been outstripped by any other branch.

"The earth may have to look to chemistry for the continuation of its future life," he said. "We have come to realize that our resources must be conserved at the same time they are being used. Reckless expenditure of our natural resources must be succeeded by intelligent conservation."

Responses were made by Dr. Rudolph Wegschneider, for Austria; Prof. Leon



PROVINCIAL MEMBERS OF THE INTERNATIONAL CONGRESS.

Left to Right: Sir William Ramsay, K. C. B., D. Sc., F. R. S.; Dr. Rudolph Messel, F. R. S., Retiring President, Society of Chemical Industry; Dr. William H. Nichols, President Eighth International Congress of Applied Chemistry.

Lindet, for France; Prof. Dr. K. von Buchka, for Germany; Sir William Ramsay, for Great Britain; Dr. Jokichori Lemori, for Japan; Commanditore Giacomo Ciamician, for Italy; Prof. P. Walden, for Russia; Prof. Belisario Diaz-Ossa, for South American Republics; Dr. Samuel Eyde, for Norway.

Subsequently, at 4:30 o'clock, the visiting delegates presented their cards at the White House and were ushered into the East Room. The president occupied an invalid chair facing the rows of guests seated in chairs arranged in semi-circles.

The compliment of the congress paid by the President in coming in from Beverly to receive the delegates was referred to appreciatively by Dr. Nichols, after which President Taft welcomed them on behalf of the American people, and told them that theirs was an important congress because of its relation to the industrial world. He said he noted that the discussion of patent laws occupied one of the divisions of their programme. After discussing the matter of the improvement of the machinery in the patent office, the President spoke extemporaneously as follows:

"I may add that one of the great opportunities for reform, in my judgment, is in the shortening of patent litigation and the reducing of its expenditure.

"I know very little about chemistry, but I know a good deal about patent litigation. I know the amount of money that has been unnecessarily wasted, and the inequality that has been produced between the rich and the poor litigant by reason of the unnecessary expense of that litigation. This is one of the things that calls for an immediate remedy.

"It is not essential that we should make a record of 10,000 printed pages at \$50 a day for experts and \$100 a day for patent lawyers. I have no objection to experts. I have no objection to patent lawyers, but I think we can have too much of both.

"What ought to happen is that the expert should be called into open court, should there be examined on the principal points of the case, and then dismissed, and not have that interminable system of records, which every judge who has had any experience in respect to patent law must condemn, on the one hand because of its uselessness, and on the other because of its expense. You observe that I am willing to make a diversion in the direction of which I know something."

The greater part of the time on Thursday was spent by the delegates in seeing Washington and in visits of inspection to several of the Government bureaus. All took trains in time to reach New York for the opening of the business sessions of the congress at Columbia University on Friday morning.

SECTION ON PHARMACEUTICAL CHEMISTRY.

The Congress was divided into 24 sections which held their meetings in the different buildings of Columbia University, beginning Friday morning, Sept. 6, and ending Thursday afternoon, Sept. 12. The total registration at the Congress reached about 4000. The meetings, quite especially the general lectures were largely attended and the discussions were lively. It is perhaps needless to remark that the A. Ph. A. was well represented in the authors of the papers as well as those taking part in the discussions.

Section VIII B. Pharmaceutical Chemistry is the one of special interest to

the members of the A. Ph. A. and we herewith present an abstract of the papers and discussions.

The officers of the Section were:

President: Prof. Joseph P. Remington.

Vice-President: Prof. Virgil Coblentz.

Secretary: Otto Raubenheimer.

The morning's session on Friday, Sept. 6, was opened in Room 306, Engineering Building, Columbia University, by President Remington, who announced that owing to Dr. Rosengarten's many engagements during the Congress, he had appointed Otto Raubenheimer as secretary of the Section which action was approved by the members.

In his address, Prof. Remington pointed out that the Section on Pharmaceutical Chemistry is the "Baby" section of the American Chemical Society and also of the Congress, that the papers before the Section deal chiefly with plant cultivation in order to uniformly increase their active constituents and also to enhance their commercial value, furthermore with volatile oils and their analysis and with reagents and color standards. After the introduction of Dr. Vieth of Ludwigshafen and Dr. Lueders of Hamburg the *Report of the Commission on Variations in the Activity of Toxic Drugs* was read by William Mair, which was received and referred to the Executive Committee for publication.

President Remington appointed the following members as Committee on Resolutions: Drs. Reid Hunt, Vieth and Mair.

One of the delegates of the Pharmaceutical Society of Japan, Mr. Wooyenaka was next introduced by President Remington. The paper by Messrs. Ransom and Henderson on *Belladonna, the effect of cultivation and fertilization on the growth of the plant and the Alkaloidal content of the leaves* was read by Mr. Mair and was discussed by Prof. Remington, Dr. Vieth, Kahn, and Messrs. Mayo, Raubenheimer and Mair.

At the afternoon's session with an attendance of 35 members Prof. Kahn presented the greetings of the New York State Pharmaceutical Association and another foreign member, Dr. S. Weber of Darmstadt, Germany was introduced. In the absence of the authors Secretary Raubenheimer read the paper "*The Potency of First Year Cultivated Digitalis Leaves as Indicated by Physiological Assay.*" In the very lively discussion which ensued the following members participated, Drs. Vieth, Hatcher, Sollmann, Kahn, Messrs. Raubenheimer and Lichthardt and Mair and President Remington. It was shown that it is essential to thoroughly dry digitalis and keep same dry if necessary over lime and also that the two important questions if wild or cultivated leaves, from either the first or the second years growth, are to be preferred, needs more study.

Secretary Raubenheimer also read the second paper "*The Alkaloidal Content of Individual Plants of Datura Stramonium and Datura Tatula.*" which was not further discussed.

In the absence of the authors, Secretary Raubenheimer also read the third paper "*Study of American Grown Indian Cannabis.*" after which President Rem-

ington pointed out that besides Indian Cannabis, American grown Cannabis has been proposed for admission into U. S. P. IX.

The morning's and only session on Saturday, Sept. 7, of the Section was opened by President Remington.

The paper by Francis H. Carr "*The Effects of Cultivation upon the Alkaloidal Content of Atropa Belladonna*" was read by Prof. Army in the absence of the author and was not followed by any discussion.

The highly instructive paper of Prof. Henry Kraemer: "*The Influence of Heat & Chemicals on the Starch Grain*" was read by Mr. M. I. Wilbert, who also called attention to the previous work on starch by the same author. The paper was discussed by Dr. Lueders and Messrs. Lichthardt, Wilbert and Raubenheimer.

President Remington then introduced Dr. F. Raschig of Ludwigshafen, who gave a highly interesting and instructive lecture in German on the "*Chemistry of Phenol and Allied Disinfectants*," which was based on practical experience of 25 years. The lecture was greatly appreciated and applauded and Dr. Raschig was given the thanks of the Section. Dr. Lueders and Weber and Mr. Wilbert and Lichthardt took part in the discussion.

Monday morning's session was opened by President Remington with an attendance of thirty.

President Remington called attention to a number of photographs which illustrate the papers of Mr. Miller, read at Friday afternoon's session.

The first paper by A. R. L. Dohme and H. Engelhardt: "*Assay of Cinchona Bark*" was given in abstract by President Remington.

The second paper by George L. Schaefer: "*Quinine Alkaloid and some of its Compounds*" was read by Dr. Alpers in the absence of the author.

The discussion was opened by President Remington who explained that these papers were very valuable to the U. S. P. Revision Committee as they showed the variation of hydration in commercial quinine alkaloid.

Prof. Army spoke on the difference in hydration, on the various solvents and on the combination of quinine with volatile oils. Mr. Lichthardt questioned the last statement in the authors paper and thought that the words "*volatile oils*" might better be changed to "*terpenes*."

Prof. Coblentz and Dr. Alpers also discussed the paper.

Secretary Raubenheimer stated that from his experience some of the hydrocarbons, especially, when used as solvents in recrystallization, seem to form combinations with alkaloids, or replace part of the water of hydration. This is especially true of cocaine alkaloid when crystallized from benzol. The secretary also pointed out that quinine alkaloid should be kept in amber bottles, which should be well stoppered to avoid loss of water.

Dr. Vieth stated that combinations can be formed with hydrocarbons as f. i. morphine and codeine with benzol or with resorcinol, or with encalyptol.

Prof. Remington closed the discussion with the statement that the *most stable* quinine alkaloid would be selected as the next U. S. P. product.

SYMPOSIUM ON ESSENTIAL OILS.

Monday Afternoon, Sept. 9, 1912.

First paper: "*Contribution to the Unification of Methods of Analysis of Essential Oils*" by Paul Jeancard, Ingenieur des Arts et Manufactures, and Conrad Satie, head of the Research Laboratory of Antoine Chiris et Jeancard Fils, Reunis. This was the first paper on the program and in the absence of the authors was read by Vice-President Prof. Coblenz. The authors, who are well known to the chemical and essential oil world, endeavor to establish general principles in order to bring about uniformity—the analysis of essential oils all over the world, a very desirable object indeed.

Suggestions are made by the authors on the following points:

- I. Definition of Essential Oils.
 1. The vegetable matter treated.
 2. Processes of Extraction.
- II. Determination of Physico-Chemical Constants.
 - A. Physical Standards.
 1. Specific Gravity.
 2. Rotatory Power.
 3. Solubilities.
 4. Melting and Congealing Points.
 5. Refraction Indices and Viscosity.
 - B. Chemical Constants.
 1. Acid Number.
 2. Saponification Number.
 3. Saponification Number after Acetylation.
 4. Saponification Number after Formylation.
 5. Products Soluble in Soda.
 6. Aldehyde and Ketone Values.

The Second Paper: "*Unification of Processes for Commercial Analysis and Valuation of Essential Oils*" by John C. Umney F. C. S. and E. J. Parry B. Sc., was read by Prof. H. Vin Army in the absence of the authors. These well known essential oil chemists call attention to the discrepancies in the results obtained by different analysis in the examination of essential oils. While Jeancard and Satie treat this important subject from the standpoint of the manufacturing chemist, the authors pay special attention to the analytical methods for the valuation of essential oils.

The following points are discussed in the paper:

- Density.
- Refraction Index.
- Polarimetric Results.
- Temperature.
- Oils containing Aldehydes, other than Lemon Oil.
- Lemon Oil.
- Oils containing Phenols.
- Oils containing Esters
- Oils containing Free Alcohols.
- Oils containing Cineol.

The suggestions made by the authors are offered as a basis for discussion between essential oil analysts.

The Third Paper: "*Analysis of Oil of Bitter Almond and Benzaldehyde*" by Dr. Francis D. Dodge, was read by Dr. Eccles in the absence of the author.

This is a review of the principal available assays, namely:

1. The U. S. P. process. (Sadtlger.)
2. The Iodometric. (Ripper.)
3. The Hydrazone process. (Denner.)
4. The Oxime process. (Walther, Bennett.)
5. A method based on Cannizzaro's reaction.

DISCUSSION.

Room 306, Engineering Building, in which the Section on Pharmaceutical Chemistry held this meeting was almost completely filled with pharmaceutical and essential oil chemists and manufacturers or their representatives. The chemical and pharmaceutical journals including the Journal of the A. Ph. A. were also well represented. The discussions were lively and this very important subject was treated from several view points.

President Remington called on Prof. Edward Kremers, of the University of Madison, Wisconsin, a well-known authority on essential oils and one of the authors of Gildemeister—Hoffmann—Kremers "*The Volatile Oils*," to open the discussion.

Dr. Kremers pointed out that essential oils differ greatly owing to the difference in the plant themselves, *f. i.* if mature or immature, or in the soil, or season and as to a number of other influences. It is well known that volatile oils have always been prone to adulteration both accidental and intentional. The age of the oil also has a great bearing on its constants. A fresh oil and an old oil differ somewhat, as is well exemplified by the rotatory constants of fresh and old oil of lemon. There is great difficulty of control in essential oils as frequently the crop is extremely short and the next year's crop is then obtained from plants, etc., which are not mature. The resulting oil will therefore possess different constants. That the definitions of the various pharmacopœias can also be improved can be seen from the following examples given by Prof. Kremers: Oil of peppermint is distilled from the *fresh plant* and not the *dried leaves*, oil of lavender is generally not distilled from the *flowers only*, but from the *entire plant*, sometimes even including the root. Oil of cinnamon of the British Pharmacopœia should be distilled from *Ceylon cinnamon*, but most of it is manufactured from *cassia cinnamon*. The methods employed in the production of essential oils differ, but should be left with the manufacturer, who however, should bear in mind that the resulting oil must be of standard quality and purity. The desirability of having uniform and even international methods of analysis is self-evident and the subject should be considered from two view points, namely from that of the phyto-chemical investigator and from that of the government official. Prof. Kremers also stated that the old Dumas classification which came into use in 1833 and which is still adhered to in the different textbooks should certainly be abolished, as volatile oils are *not* definite chemical bodies.

Dr. Clemens Kleber, a well-known oil chemist, was next called upon by President Remington. He pointed out the many advantages of the U. S. P. temperature of 25° C. instead of 15° C., as advocated by Jeancard and Satic and also by Umney and Parry. Dr. Kleber also stated that Ostwald, the physical chemist, was in favor of making 25° C. the standard temperature. The use of a coefficient in specific gravity and the uniform statement of solubility in 70 per cent alcohol were also advised by Dr. Kleber. He also thought that Jeancard's and Satic's definition of "*Acid Number*," *i. e.*, the number of milligrams of KOH necessary to neutralize one gram of essential oil could be improved by expressing it in *cubic centimeters of Normal Alkali Volumetric Solution*.

He could not agree with the French authors, who employ N/2 Potassium Hydroxide Vol-

umetric Solution and then titrate the excess of alkali with N/8 Sulphuric Acid Volumetric Solution. Dr. Kleber favors the method, now in general use, namely saponification with N/2 alkali and titration with N/2 hydrochloric acid. Dr. Kleber concluded that this very difference in the method of determining the saponification number proved how necessary it is to have uniform international methods for the determination of physico-chemical standards for essential oils.

The papers were further discussed by Prof. Pond, Drs. Seil and Alpers and Secretary Raubenheimer.

President Remington, the Chairman of the Revision Committee of the U. S. P. informed the Section that it has been definitely decided that 25° C. will be the standard temperature in U. S. P. IX, and that a table will be given in the Appendix of the Pharmacopœia giving the temperature at 15° and 20° c.

Prof. Edward Kremers moved that a Committee should be appointed to draft resolutions favoring the appointment of an *International Commission on Essential Oils*.

President Remington appointed Drs. Power, Kleber and Seil as the Committee.

At the Tuesday morning's session President Remington introduced Prof. Dr. P. Walden, the well-known physical and organic chemist of the Technical High School of Riga and delegate of the Russian Government. Prof. Walden addressed the Section in German and brought greetings from Russia and its pharmaceutical chemists and pharmacists. He called attention to the fact that pharmaceutical chemistry was the oldest branch of chemistry and that great credit is due to Paracelsus the father of iatro-chemistry who turned alchemy into medical chemistry. He complimented pharmacy upon the many great chemists which came from their ranks and pointed out quite especially that modest apothecary of the little village Köping in Sweden, namely Carl Wilhelm Scheele, who made the most important discoveries in his time and who died a victim of his beloved profession and of science through the inhalation of hydrocyanic acid.

Prof. Walden closed his address by a remark which should be well borne in mind, namely that

"Pharmacy is the mother of chemistry."

Dr. Wm. Alpers answered the professor both in German and English and laid special stress upon the fact that International Congresses such as this one bring about acquaintances and friendship among scientists and strengthen the friendly relation among nations.

Dr. Gustave Drobegg handed in resolutions favoring *International Standards of Strength, Purity, Methods of Testing and Nomenclature in Pharmacopœial preparations*.

Dr. Vieth spoke on the need of a uniform International Pharmacopœia. The resolutions were referred to the afternoon session.

The first paper "*Solubility & Distribution Coefficients of Thymol*" was read by the author Dr. Atherton Seidell. Secretary Raubenheimer pointed out that besides their scientific value the figures in the paper are of great practical use to the pharmacist and chemist as f. i. the slight solubility in Paraffin Oil (5%) and the great solubility in Castor Oil (100%).

Mr. Latham called attention to the fact that even cacao butter and thymol liquefy.

Mr. Hayward inquired as to the dispensing of thymolated oil in capsules.

The second paper on the program: "*Arsenites of Alkaloids*" by A. C. Mangold was abstracted by Mr. Wilbert, in the absence of the author, but was not discussed.

President Remington announced that the afternoon session would be devoted to the introduction and discussion of resolutions.

At the afternoon session President Remington introduced Dr. Gustav Komppa of the University Helsingfors, Finland, who delivered an address in German on the development of pharmacy and chemistry. Prof. Komppa pointed out that both professions are united and depend upon each other and that the pharmaceutical chemist must be thoroughly posted in all branches of chemistry. President Remington answered Dr. Komppa and complimented the representative of Finland, a modest country, upon the honors which they have carried away in the athletic games, as well as upon their activity in pharmacy and chemistry.

As all countries are represented in this great Congress, President Remington next introduced the three delegates from the Pharmaceutical Society of Japan, namely: Dr. Jokichi Takamine, Dr. Keizo Wooyenaka and Dr. Kintaro Wooyeno.

The first two gave a report in English of the history of the Pharmaceutical Society of Japan; which takes a live interest in pharmacy and chemistry and publishes its own Journal and has a membership of 3000, being organized in 1881. Dr. Takamine spoke on the history of pharmacy and medicine in Japan, and that the European ideas have been brought there by Dutch settlers.

Dr. Wooyeno spoke in Japanese and brought the greetings of the Pharmaceutical Society and its president Dr. M. N. Nagai.

President Remington thanked the Japanese delegation and assured them of the esteem which all nations hold of the thorough knowledge of pharmaceutical chemistry in Japan.

Dr. Herman Vieth of Ludwigshafen gave a very interesting lecture in English on the *Progress of Pharmaceutical Chemistry* in Germany, which he illustrated with graphic formulae. He called attention to the very necessary knowledge of pharmaceutical and physiological chemistry, which must be combined in order to manufacture new remedies and test their therapeutic properties.

He pointed out that the Isopropyl group possesses narcotic properties, which can be utilized in combination. He also spoke on a new salt, a veronal—codeine and a new chemico—microscopic test, namely by observing the action of a drop of HCl on a crystal under the microscope.

The acid dissolves the codeine and the veronal remains in its characteristic crystal form.

Three resolutions were introduced:

1. *On a Commission on the Variation in the Activity of Toxic Drugs*, moved by Wilbert and seconded by Raubenheimer. The same was approved, and referred to the *International Commission of Congresses of Applied Chemistry*.

II. *International Standards of Strength, Purity, Method of Testing & Nomenclature of Pharmacopoeial Preparations.*

III. *International Commission on Essential Oils.*

The resolutions were ordered to be translated into German, French, and Italian and typewritten in four languages for publication in the Daily Journal.

Vice-President Coblenz called the meeting to order on Wednesday morning, Sept. 11, but owing to the slim attendance and the desire of the members to hear Prof Bernthsen's lecture "*Synthetic Ammonia*" the Section adjourned.

The afternoon meeting was a joint session with Section I, Analytical Chemistry, and Section VIII C., Bromatology, at Room 401 Kent Building, President Dr. Hillebrand being in the chair. It was arranged that the secretary of Section I keep account of these minutes and discussions. To prove how important and valuable such joint meetings are can readily be seen from the following incidents. The author of a paper on refractometry was glad to be informed by the secretary of Section VIII B., that the new Swiss Pharmacopoeia contains a table of refractometric constants of fats and oils and also a conversion table.

Secretary Raubenheimer also had occasion to correct a chemist who named a solution of a volatile oil in alcohol "*tincture*" instead of "*spirit*" thus showing the need of more uniform nomenclature, nationally as well as internationally.

Vice-President Prof Coblenz opened the meeting on Thursday morning, Sept. 12, which reached an attendance of 35 members.

He introduced Dr. Rudolf Wegschneider of Austria, who brought greetings from the Austrian Chemical and Pharmaceutical Associations and complimented the Congress on having a Pharmaceutical Chemistry Section. Prof. Remington thanked Dr. Wegschneider for his greetings and at then introduced Geheimer Ober-Regirunysrut, Prof. Dr. K. von Buchka, Chairman of Technical Examination Bureau of the Treasury at Berlin, who delivered an instructive lecture in German on a very important and timeiy subject, namely "*Methyl Alcohol*," its presence in liquors, pharmaceutical preparations and cosmetics, its toxic properties and its detection. Prof. von Buchka promised to present an abstract of his highly instructive and interesting lecture for publication in the proceedings.

Prof. Remington thanked Dr. Buchka for bringing this important subject before the International Congress, being a question for the health of the community at large. He pointed out that U. S. P. VIII did not admit methyl alcohol for this very reason and included tests for its detection in ethyl alcohol or other preparations. Prof. Coblenz also endorsed this standpoint.

Dr. Lüders pointed out the toxicity of the methyl group, and that dimethyl sulphate is one of the most poisonous chemicals and that great care should be used in handling it.

The secretary said that owing to the name wood "*alcohol*" it was frequently confused with *ethyl* alcohol and that furthermore the manufacturers of the chemically pure deodorized methyl alcohol sold same under misleading fictitious names as *Spiritol*, *Spiritogen*, *Spiritol Colonial* and *Columbian Spirit* and did not label it "poison."

Dr. Houghton stated that ethyl salicylate was less poisonous than methyl salicylate.

Dr. Fred. Power of London, an active A. Ph. A. member and former resident of the U. S. was also introduced by President Remington and was very glad to again meet some of his American chemist friends.

Dr. George L. Schaefer explained the combination of quinine alkaloid with essential oils and hydrocarbons by replacing part of the water of hydration. He stated that the terpenes or pinenes of the oil will do that, while the phenols in the volatile oils, as a rule do not combine. He also demonstrated that combination of quinine and benzoin or naphtha will burn and leave behind the *pure quinine alkaloid*. He furthermore demonstrated that when f. i. quinine-benzoin is dissolved in diluted hydrochloric acid the benzoin will be separated and float on top of the liquid.

Prof. Arny and Secretary Raubenheimer entered the discussion, and the latter asked Dr. Schaefer to explain which the most stable quinine alkaloid is, for the benefit of the U. S. P. Revision Committee. He replied that the anhydrous quinine alkaloid is the most stable and that the U. S. P. should make a limit of 2% H_2O which might be absorbed.

At the afternoon session President Remington explained that owing to the necessary translation of the resolutions into three other languages and the type-writing they were not ready in time to be published in the Daily Journal of the Congress, but that he went before the International Commission of Congresses, composed of all the presidents, who approved of the resolutions by combining the Volatile Oil and Pharmacopoeial Preparations in one resolution.

Mr. Wilbert thought that this was the better plan as it will place the responsibility on one person.

The two resolutions on:

1. *Variation in the Activity of Toxic Drugs.*
2. *Organization of an International Committee on Standards and Tests* were adopted.

The first paper on "*International Standards of Colored Liquids and a Suggested Method of Standardization*," was read by the author, Prof. Arny and was demonstrated with an array of specimens.

The author brought out the following points:

1. The need of International Standards for colored liquids has been demonstrated in the daily routine in the manufacture of oils, liquors and pharmaceuticals.
2. Attempts to meet this need have been made by various colorimetric appliances, which however, are limited owing to their cost and the instability or unreliability of the matching agents.
3. The plan of the author is the preparation of half-normal slightly acidulated solution of cobalt chloride for red, ferric chloride for yellow, cupric sulphate for blue, and blending these in any proportion desired.

4. As many as 88 blends have been prepared, the tints of which range from the pink of the cobalt solution to the blue of the copper solution.

5. The author suggests a system of color nomenclature based on proportions of the half normal red, yellow and blue solutions employed to make the tint and he reports on such "Co-Fe-Cu" factor of caramel and of cudbear dilutions.

This original paper, the result of a great many experiments by one of our A. Ph. A. members was received enthusiastically and caused a very lively discussion.

The different questions asked by Messrs. Vanderkleed, Wilbert, Latham, Rasin, Parks, and Bernegau were answered by Prof. Arny as follows:

- a. Neutral solutions do not keep, but acid solutions do keep.
- b. High dilutions are best for matching.
- c. The scheme is not intended for color-blind persons.
- d. It is impossible to match liquids against color charts.
- e. Matching can be well done in Blake bottles.
- f. A multiple of three was found more practicable than the decimal system.

Secretary Raubenheimer showed the book "*Code des Couleurs*," which was adopted by the tenth International Congress of Pharmacy at Brussels in 1910, as a color standard in pharmacy.

The other papers read were:

Determination of Calcium Sulphide, by Joseph Rosin.

Prevention of Emulsification in Extraction by Immiscible Solvents, by G. H. Meeker, was read by Prof. Vanderkleed and was discussed by Messrs. Rosin and Bernegau.

Dr. Fred. Klein gave an interesting talk with demonstrations on "*A New Iron Reagent*."

Prof. Arny moved that a vote of thanks be given to the President and Secretary of the Section for their efficient work.

Dr. Rich. Lüders expressed the thanks of the foreign delegates for the hearty reception which they have received, especially from the Pharmaceutical Section. He complimented President Remington and Secretary Raubenheimer for the splendid work accomplished and proposed a rising vote of thanks, which was promptly given.

The Section adjourned at 3:30 p. m., with a hearty *Vivat, Crescat, Floreat!* to the International Congress of Applied Chemistry.

RESOLUTIONS.

The following two important resolutions were adopted by the Section on Pharmaceutical Chemistry on Thursday, September 12, and were also passed at the final general meeting of the Congress on Friday, September 13.

As will be seen the work of both committees is very important and the result of their activity is to be reported at the Ninth Congress of Applied Chemistry, to

be held at St. Petersburg in 1915, under the presidency of Prof. P. Walden, who delivered a lecture before the Section on Pharmaceutical Chemistry, as reported above:

I. *Resolved*, Section VIII-b (Pharmaceutical Chemistry) of the Eighth International Congress of Applied Chemistry having received and discussed the report of the International Commission on "*Variation in the Activity of Toxic Drugs*," resolves that it is desirable that this inquiry be continued and that the International Commission be reformed, to consist of the following eight members: Austria, Prof. Wilhelm Mitlacher; France, Prof. E. Bourquelot; Germany, Prof. H. Thoms; Great Britain, Francis Ransom; Netherlands, Prof. L. Van Itallie; Russia, W. Ferrein, Mag. Ph.; Switzerland, Prof. A. Tschirch; United States, Dr. R. H. True, and the following three secretaries: G. P. Forrester, F. C. S., European continent; Peter McEwan, F. C. S., Great Britain; Otto Raubenheimer, Ph. G., United States.

It is further resolved that this commission be authorized to enlist the co-operation of other persons actively interested in promulgating international uniformity of standards for potent drugs and improvement in their cultivation and collection.

II. *Resolved*, That the International Commission of Congress of Applied Chemistry be requested to approve the organization of an International Committee under Prof. Joseph P. Remington and composed of chemical experts approved by this Commission, whose duty shall be to collect information from every available source on *chemical products and essential oils used in pharmacy* and to investigate the tests now in use, to prove the identity and purity of said products and oils, also consider standards and tests with the view of establishing uniformity in the same throughout the world and to report to the Ninth International Congress the result of its work.

THE N. A. R. D. CONVENTION.

The 14th annual convention of the N. A. R. D. at Milwaukee, August 12-15, was abundantly successfully from many points of view.

The attendance was large and the enthusiasm was at concert pitch from the first to the last stroke of the presiding officer's gavel.

Officers elected for the ensuing year are as follows:

President—Mr. Henry W. Merritt, Plains, Pa.

First Vice-President—S. A. Eckstein, Milwaukee, Wis.

Second Vice-President—H. W. Rietzke, St. Paul, Minn.

Third Vice-President—H. S. Keables, Pella, Ia.

Secretary—Thomas H. Potts, of the United States of America.

Treasurer—Grant W. Stevens, Detroit, Mich.

Executive Committee—J. Arthur Bean, Boston, Mass. (3 years); Charles H. Huhn, Minneapolis, Minn. (3 years); H. C. Shuptrine, Savannah, Ga. (2 years); H. B. Guilford, Rochester, N. Y. (2 years); A. E. Zuber, Chicago, Ill. (1 year); Samuel C. Henry, Philadelphia, Pa. (1 year).

The crowded condition of the *Journal's* columns prevents the reproduction of more than very brief extracts from the voluminous reports of officers and committees, but the utterances quoted are significant and may be regarded as reflecting N. A. R. D. sentiment upon the subjects concerned.

From the Address of President H. C. Shuptrine.

U. S. P. AND N. F. PROPAGANDA.

The U. S. P. and N. F. Propaganda I am more an advocate of than ever before. I am thoroughly convinced that there is no branch of our work which is of more real worth than this. I, for a long time, contended it was a work the N. A. R. D. could not carry on to the betterment of either the organization or the individual druggist. It seemed to me that to handle the proposition through the National Office and extend it over the entire country would be a matter of utter impossibility but, gentlemen, it is not so. If in my home town the success can be made that we have made, then I unhesitatingly say that there is not a community anywhere immune to the cause. Many dollars have been made because of the propaganda movement and there are many more in store for us. But—the National Office can not do it all. As a matter of fact, it can do only a small part of it. It blazes the way, clears the forest of its thick and puzzling growth, leaving for us as fertile and clean soil as ever a seed of work was sown. Let us each take it upon ourselves to do the work, make it a special effort to see that the work is carried to the physicians, and the outcome will then surpass our most sanguine expectations.

The furtherance of this movement by the individual druggist isn't a work to be classed as one for the good of the N. A. R. D. As I see it, it is a work of selfishness pure and simple. We do not go into this movement because we love the N. A. R. D., nor do we do it because we each love the other druggist, but we have busied ourselves because of the good we each derive as individuals. We feel

indebted to the N. A. R. D. for showing us the way and giving us the invaluable assistance it has, as, if it had not been for the National Organization, we could never have moved an inch and could never hope to move another peg in all the time to come.

AMERICAN PHARMACEUTICAL ASSOCIATION.

Disseminating the truest principles of Pharmacy is the one aim of the N. A. R. D. and it has accomplished its purpose during all these years to the satisfaction of all concerned. We realize that while our results clearly manifest what we can do, but with the hearty support of our allied associations much more we can do and very much more easily. We look first to the American Pharmaceutical Association. The A. Ph. A. stands alone in the promulgation of the highest pharmaceutical ethics. The A. Ph. A. stands alone when it comes to forwarding the profoundest professional reforms and in the mention of the greatest educational organizations, the old, old schools, this grand old organization illumines in mighty brilliance the very first page of organized pharmacy in this country and its influence has been wielded through every vein of its history.

We are grateful for our affiliation with the A. Ph. A., we are thankful for the counsel that is ours at its hands, and I hope that from today on there will be even a closer working of the two organizations. When it comes to the commercial, our end; when it comes to influences which have direct effect on the druggist as a retailer or a merchant; when it comes to making standards druggists should adopt in maintaining the dignity of our calling, I do not think there are any higher canons than those set forth in the Constitution of the National Association of Retail Druggists. In commercialism we can be as honest, as square in our dealings with our fellow man, maintain just as high a sphere in the universe of business as we could if we were solely connected with professionalism.

The A. Ph. A. looks after the ethical and professional interests—interests which are just as necessary to our progress—with the same zeal the N. A. R. D. looks after the commercial, but is it not possible for the two to interweave their respective interests which would help each other to do its work to even greater ends? I suggest that proper resolutions be drawn and sent to our sister organization showing our continued willingness to cooperate in every way we can and stay within true N. A. R. D.-ism to make yet greater promotions in American Pharmacy.

GRANTING OF PATENTS AND TRADE-MARK REGISTRATION ON MEDICINES.

Relative to the action of the Section on Pharmacology and Therapeutics of the American Medical Association at its last Convention, the decided stand it took on the granting of patents and trade-mark registration on substances and compounds used in medicines, I think the National Association of Retail Druggists in this Convention,

should unqualifiedly recommend and stand for the granting of patents and trade-mark registration on medical substances.

If there is any good reason why the pharmacist should not be permitted this protection the American Medical Association has failed to show or relate it. I think that it is an established fact that in many of the patented preparations in medicine there are aids to the physician without which he would be where he was before their introduction. As to patent medicines, or trade-marked specialties, the ingenious pharmacist with enterprise and brains, and with all the honesty that ever a physician or anybody else could have, who manufactures and places upon the market a patent medicine that will do what is claimed for it, must be classed with that man who would stoop to stultify anything and everything for the sake of a dollar. A pharmacist must not be progressive; a pharmacist must not possess, or if he should possess, he must not use his brains to not only his but the advantage of millions of people who can't afford to pay a doctor his fee of two dollars every time he wants a dose of paregoric or wants a cough syrup, a liniment or anything else within the scope of household remedies!

From the Report of Secretary Thos. H. Potts:

THE PUBLICITY DEPARTMENT.

Mr. Carr in his report should convince the most skeptical that Greater NOTES is the most progressive and up-to-date Pharmaceutical Journal published in this country, excepting none. The subject matter more especially the editorials, are constantly improving and we sincerely hope the success of the Journal meets with your approval.

Advertising matter is on the increase and advertisers are commencing to observe that advertising in NOTES brings remunerative returns. The Advertising Committee has used its best efforts to keep the advertising pages of NOTES clean and free from obnoxious advertising matter. Both Mr. Carr and his assistant editor, Mr. Bruder, are deserving of the maximum of commendation for their earnest endeavors to make NOTES not only the equal but the superior of any other Pharmaceutical Journal.

From the Report of the Legislative Committee:

THE RICHARDSON BILL.

In progressive efforts that may be called reconstructive our greatest work, the greatest work of the year, was in connection with the bill generally referred to as "The Richardson Bill," a bill to amend the Food and Drugs Act, introduced by Representative Richardson of Alabama.

THE LEGISLATIVE CONFERENCE.

In the interim, the Executive Committee of the N. A. R. D. at its winter meeting had passed a resolution authorizing the Chairman of this Legislative Committee to call a Legis-

lative Conference in Washington at such time as might seem best to him and his fellow members. The Secretary of this Association being instructed to extend invitations to the National Associations of the wholesalers, proprietors, pharmaceutical manufacturers and the A. Ph. A. to send legislative representatives to the proposed conference.

While the date of such Conference was still undecided, the unexpected call for the hearings on the Richardson bill went out. This changed all our plans, for the date set for the hearings, April 23-26, did not allow us enough time to assemble our Committee in Washington, much less to arrange a formal Conference.

After much wiring between your Chairman, Secretary Potts, and the members of the Committee, we managed to secure the presence of a majority of our Committee at the Hotel Raleigh, Washington, on April 27.

Additionally there were present Fred A. Hubbard of Newton, Mass., and Christopher Koch of Philadelphia of the A. Ph. A., while John C. Wallace of New Castle, Pa., and the chairman of your Committee are members of the Legislative Committees of both the N. A. R. D. and the A. Ph. A. Additionally Professor F. C. Nixon of Leominster, Mass., a member of the Committee of Revision of the U. S. P., was present as a representative of the Massachusetts Pharmaceutical Association, and rendered very valuable assistance.

The Washington meeting to which reference has just been made has been freely spoken of as "a Legislative Conference." It was the original intention to make it broadly such. As has been stated, invitations had been extended to all National Associations within the trade. At the time of the hearings there were in the city prominent members of all the Associations. Manufacturers of pharmaceutical specialties, as such, held no discussions with us. On the night of April 28 we received large delegations from the wholesalers and proprietors. Their spokesmen, all very able men, stated their opinions and desires upon the legislative matters proposed in the Richardson bill. After such expressions had been received, those who only had truly been in conference, in discussion, representatives of the N. A. R. D. and the A. Ph. A., retired from the room, and in a few moments returned, and their spokesman stated, with expressions of regret personal to all, that we did not see our way clear to joining our guests in their chief points of opposition to the Richardson bill.

Thus it will be seen that the original intention of a general Inter-Association Legislative Conference was not realized. At his appearance before the House Committee, Mr. Freericks spoke for retailers. True, he spoke for the A. Ph. A. conferees, and, although their great and worthy Association does not restrict its membership to retailers, there was, there is no assumption that the opinions expressed by us at the hotel, and by the utter-

ances of Mr. Freericks at the Capitol were uttered otherwise than in behalf of retail druggists—exclusively so. And, in the afterthought your Committee finds satisfaction in the outcome.

LINES OF CLEAVAGE.

No class of business men can afford to ignore new lines of cleavage that may come in either class or mass. To state that intra-class divisions are less evident than they were would be to utter an untruth, for, on the reverse, divisional lines were never so sharply drawn as they are now. As evidence of this, we may note that during the year the manufacturers of what are generally known as "Pharmaceuticals" have seen fit to separate themselves from the "Proprietors" and form an Association of their own, finding, no doubt, that among other things, the trend of legislation made it advisable.

It is not our thought that the future should show less of good will between the different divisions within the class than in the past, for, on some great legislative problems we feel that we shall stand closer together than ever before. However, from our point of view, general economic conditions not only make it wise, but imperative, that each division of the trade shall act with absolute independence in deciding what its legislative aims shall be. If differing needs demand different Associations, then surely, effectiveness will be increased if each Association take the initiative and keep the lead in all legislative matters peculiar to it; each Association giving to the other moral support when it may do so without entering into entangling alliances. Even though the object be the same, it will assure effectiveness if many arrows are aimed at one mark, rather than many archers aiming one arrow.

STATUS OF THE N. A. R. D.

While it has been conclusively proven that intra-associations of our members can successfully manufacture in cooperation and fully as successfully purchase and distribute jobbing quantities, our members so combined have never for a moment ceased to be retailers. Thus, the N. A. R. D. represents all the interests of retailers, but it does not claim, does not wish to represent any other interests.

It is truly a NATIONAL Association of Retail Druggists. This being so, there is no retail druggist or Association of retail druggists beneath our flag but that may, if it will, have fair representation and free voice in and through our Legislative Committee.

Therefore we recommend that in future this Association through this Committee shall concern itself with all legislation for retailers, and directly with the legislative interests of no others. And, in full justice to other divisions of the trade, we express the belief that our course will meet with their full approval, and that any other course on our part might be presumptive.

From the Report of the Committee on Fraternal Relations:

Your committee recommends better and more fraternal relations with every organization, association and profession with which this body and its members have any contact or dealings. Starting with the axiom that "he who would have friends, must show himself friendly" we urge that this body and its members seek to cultivate harmony and co-operation with all bodies possible, to this end, we recommend that closer relations be cultivated with such bodies as the American Pharmaceutical Association, the American Medical Association, the National Wholesale Druggists' Association, the Proprietary Association of America, the Dental associations, the Veterinary associations, and the allied trade and commercial associations. It is true that with nearly all of these we have at times some points of opposition and some of them become rather vigorous at times. But it is equally true that with all of them there are many things we have much in common, and we believe that by emphasizing our common aims, and working with them and for them we will reach a better status when it comes to points in controversy.

From the Report of the Resolutions Committee:

Resolved, That price protection, propaganda work and legislation continue to be the prominent issues of this association.

Resolved, That the Committee on U. S. P. and N. F. Propaganda be increased to one member from each state affiliated with the N. A. R. D. and that the Constitution be amended to this effect.

Resolved, That each State Association be accorded membership in the N. A. R. D. by the payment of Twenty-five Dollars (\$25.00) per annum and shall be entitled to two delegates at each annual convention.

Resolved, That local Associations be accorded representation at the annual meetings of the N. A. R. D. as follows: One delegate for each twenty-five dollars or fraction thereof.

WHEREAS, The health of retail pharmacists generally would be improved, their comfort and happiness increased, their lives prolonged by Sunday closing and shorter hours, be it

Resolved, That this Association again calls upon its members to give the matter of Sunday rest and shorter hours the most serious consideration and that the same be put in effect as rapidly and completely as circumstances will permit.

Resolved, That the N. A. R. D. hereby endorses the activity of the National Anti-Coupon Association and extends to that Association its moral support and cooperation.

Resolved, That our legislative Committee with the assistance of our Legal Department undertake to draft a model bill restricting the sale of drugs to registered pharmacists, and that the same be placed in the hands of

affiliated State and Local Associations upon request therefor.

Resolved, That Alynin be added to the list of drugs recommended by our Conference Committee to be specified upon the label of preparations containing the same.

Resolved, That we disapprove and use our efforts to defeat the Owen bill in its present form.

Resolved, That copies of the resolutions of this convention bearing upon the relations between physicians and pharmacists be included in the literature sent to physicians during the year.

Resolved, That it is with much pleasure and satisfaction that we record the closer friendship the year's work has brought between the A. Ph. A. and the N. A. R. D., and court the continuation of mutual activities and the cementing of the most true and firm bonds of fraternity.

Resolved, That we continue our efforts for the advancement of pharmacists in the United States Army.

Resolved, That where physicians are allowed to dispense that the same laws should regulate the practice as does the law concerning the pharmacist, especially in reference to narcotic and habit-forming drugs.

Resolved, That every affiliated association is hereby requested to endorse Senate bill 7017, that each member be instructed to write to his United States Senator and Representative in Congress urging the passage of Senate Bill 7017. And that the best efforts of all concerned be used in support of this bill.

Resolved, That in future this Association through its Legislative Committee shall concern itself with legislation that affects retailers and directly with the legislative interests of no others.

WHEREAS, The N. A. R. D. at its last annual meeting held at Niagara Falls endorsed the Coupon Agency Plan, and

WHEREAS, The Executive Committee of the N. A. R. D. at its mid-year meeting held in Chicago again endorsed the Coupon Plan as formulated by Attorney Freericks, be it

Resolved, Therefore, that the N. A. R. D. again endorse the Coupon Agency Plan as the best known remedy to stop the indiscriminate cut-rate evil.

WHEREAS, There is a marked tendency on the part of the manufacturing trade to discriminate when it comes to enlarging their list of wholesale distributors, and

WHEREAS, This list is enlarged from time to time when new wholesale firms are established, be it therefore

Resolved, That it is the sense of this convention that in enlarging their list of wholesale distributors no discrimination should be made against wholesale houses incorporated under the laws of their respective states the stockholders of which are retail druggists and those the stockholders of which are not,

this convention holding that retail druggists should not thus be barred or penalized for engaging in a perfectly legitimate business in which there is a good profit.

Resolved, That it is the sense of this convention that retailers engaging in the wholesale business should respect manufacturers' terms when the same apply to all wholesalers alike.

WHEREAS, It is the custom of certain classes of manufacturers to advertise and otherwise announce new and comparatively unknown articles with the use of the term, "For sale by All Good Druggists," "For sale by All Enterprising Druggists," or other terms of the same class, and

WHEREAS, Such mode of announcement is in the nature of an effort to force retailers to purchase new and untried merchandise in order to protect themselves from injury to reputation from the implication that a druggist who does not have the goods is not a "Good or Enterprising Druggist," be it

Resolved, That the National Association of Retail Druggists hereby records its disapproval of such form of expression in advertising, and urges its members to use every honorable means to combat the same.

WHEREAS, At a conference of the Legislative Committee of the N. A. R. D. and the A. Ph. A. held at Washington, certain well-founded objections to the proposed Richardson bill were pointed out and changes therein demanded, resulting finally in the drafting of a bill by said Committee which appears in the Hearings before the Committee on Interstate and Foreign Commerce, House of Representatives, Sixty-Second Congress,

WHEREAS, The said bill as drafted by the Conference aims to effectively reach wrongful practices in the sale and distribution of drugs and medicines, preventing fraud upon the public and restricting the manufacture and sale of many dangerous drugs and their compounds to qualified persons, at the same time being eminently fair to all interests concerned; therefore be it

Resolved, That we heartily endorse the changes in the Richardson bill recommended at said Conference as they appear in the hearings referred to herein and as so changed, and we advocate the enactment thereof as a measure which will be of immense benefit to the welfare of the public.

WHEREAS, H. R. Bill No. 25239 introduced by Mr. Harrison of New York, providing for the regulation of inter-state traffic in Habit-Forming Drugs, by methods which, in so far as they apply to the retail drug trade, are almost impossible to comply with, involving an enormous amount of unnecessary red tape which will bring forth much opposition thus endangering the enactment of this much needed proper regulation and legislation; therefore be it

Resolved, That we do not approve the Harrison bill in its present form;

WHEREAS, Baby soothing syrups have been sold over the druggists' counters for many years in good faith by the druggists, and

WHEREAS, Since the advent of the Food and Drugs Act, manufacturers thereof have been compelled to state the name and amounts of narcotics contained in each package, and

WHEREAS, Such knowledge now in possession of the pharmacist is sufficient to show him the pernicious character of such preparations; therefore be it

Resolved, That this N. A. R. D. does hereby condemn the manufacture, distribution and use of any and all baby soothing syrups containing narcotics or hypnotics; and be it further

Resolved, That the members of this Association do hereby agree to discourage the use of such preparations by refusing to act as distributors for them.

Resolved, That the Patent Laws be amended in accordance with the well established views of the Association as outlined in Conventions for several years past.

Resolved, That this Association favors an amendment to the Pure Food and Drugs Act that will protect the public against unwarranted claims for nostrums and will provide that the manufacturing of medicinal preparations be in the hands of licensed pharmacists.

Resolved, That this Association favors inter-state Anti-Narcotic Legislation that will prohibit all illegitimate traffic in narcotics and habit-forming drugs and confine their sales to proper channels and uses to strictly medicinal purposes.

WHEREAS, Section 7, of Regulation 7, of the Food and Drugs Act, permits the sale of U. S. P. and N. F. Preparations of various strengths, providing such strength is designated on the label, and

WHEREAS, Such provision causes much confusion in the enforcement of Pharmacy Laws providing for the use of U. S. P. and N. F. names on the drugs and standard strength alone, be it

Resolved, That this section should be repealed or so amended as to provide that all drugs sold to the public under their official names, or resold to the public under their official names or recognized synonyms, shall be of standard strength.

Resolved, That our resolution adopted at the Pittsburgh meeting in 1910 endorsing all Cooperative Associations and Organizations of retail druggists which benefit the retail druggist is hereby reaffirmed.

Resolved, That we reaffirm our oft-repeated declaration that we are opposed to the sale in retail drug stores of intoxicating liquors for other than medicinal purposes.

Report on the Progress of Pharmacy

For the Year 1912

(Fourth Installment.)

Allantoin: The Active Constituent of Comfrey—Method of Isolation.—At the request of Dr. C. J. Mackalister, an investigation of the rhizome of the common comfrey (*Symphytum officinale*) was undertaken by A. W. Titherley and N. G. S. Coppin in order to ascertain, if possible, the constituent which was responsible for its remarkable therapeutic properties (see *Comfrey Rhizome* under "Materia Medica"). The results of their exhaustive investigation prove these properties to be due to a crystalline principle, which they have identified with allantoin, a constituent of urine, and obtainable synthetically by the oxidation of uric acid. The allantoin was obtained by Soxhleting a number of portions of the coarsely powdered dried rhizome with alcohol to exhaustion, evaporating the separate extractions to about one-fourth the volume for weight of the drug used and setting the concentrated liquid aside for at least twelve hours, during which time an incrustation was formed, consisting of impure allantoin and sugar. This was removed and treated with a small quantity of water, the same being used successively on all the portions (six) so as to remove the sugar without appreciable loss of the sparingly soluble crude allantoin, which was recrystallized from hot water and eventually obtained absolutely pure. It formed perfectly colorless and transparent crystals which melted at 227° with decomposition and gas evolutions and previous darkening in color, and proved to be identical in every respect—in composition, character and reactions—with allantoin obtained synthetically from uric acid by cautious oxidation, using Behrend's method slightly modified. The authors conclude that the rhizome of *Symphytum officinale* contains allantoin to the extent of 0.6 to 0.8 per cent, calculated on the air dried material, and that the therapeutic properties of the rhizome are due to this constituent. It also contains large quantities, not estimated, of soluble carbohydrates (gums and sugars), together with catechu resins and tannins, and a small quan-

tity of volatile oil.—Pharm. Journ. and Pharmacist, Jan. 27, 1912, 92-94.

Chrysarobin vs. Chrysophanic Acid: Question of Pharmacological Identity.—In a recent number of *Rep. de Pharm* (1912, No. 6), P. Lemaire calls attention to the variability of commercial chrysophanic acid, which he attributes to the fact that more or less pure chrysarobins are generally supplied under the name of "chrysophanic acid." In consequence the preparations made with the commercial acid are very variable as supplied in different pharmacies. Commenting on this, the *Pharm. Ztg.* observes that it is a common practice of the wholesale drug trade in Germany to refer under *Acidum Chrysophanicum* in their price list simply to chrysarobin for definition and description; an obvious error, since the G. P. clearly defines what is to be understood by chrysophanic acid; but unfortunately it mentions under the list of synonyms that chrysarobin is identical with *acidum chrysophanicum crudum*. Quoting from *Merck's Index III*, 1910, it is pointed out that chrysophanic acid, which is a distinct oxidation product of chrysarobin, and therefore not identical, and that while it is probable that when chrysophanic acid is prescribed, chrysarobin is intended, this should not be dispensed under the name of *acidum chrysophanicum* unless the word "crudum" is also appended to the title. Leger, who describes tests for the distinction of the two substances (in *Jour. de Pharm. et Chim.*, 1912, No. 12), expresses the opinion that the substitution of chrysarobin when chrysophanic acid is prescribed is inconsequent, and suggests that the designation of the latter in prescriptions be omitted. He says a study of the literature convinces that the pharmacological activity of the two substances is not identical, and that therefore here also substitution should be strictly avoided.—*Pharm. Ztg.* LVII (1912), No. 55, 554.

Digitalis Leaves: Constituents.—In a comprehensive review of the constituents of *Digitalis* leaves published in *E. Merck's Annual Report*, 1912, a detailed description of

the digitalis glucosides and of other principles associated with them that have been announced from time to time will be consulted with great interest. Preliminarily the work of Homelle, Quevenne, Walz, Nativelle, Schmiedeberg and Kiliani, which led to the discovery of the innumerable digitalis glucosides—among them some that have proven to be of pronounced therapeutic value—is discussed and this is followed by a review of the digitalis substances themselves, their synonymous designations and their derivatives. The fact that this embraces a list of more than one hundred different names gives evidence of the interest which has been taken and the immense amount of research work that has been done, but at the same time also the difficulties that have been encountered in the endeavor to isolate from digitalis leaves a single substance uniting in itself the complete activity of the drug.—*Pharm. Ztg.* LVII (1912), No. 48, 481.

Rubber Planting in Malaya: An Interesting Account.—C. B. Kibble writes interestingly about the cultivation of rubber trees (*Hevea Brasiliensis*) and the collection and preparation of rubber from them in Malaya, his account being highly interesting in the light of the recent developments regarding the collection of rubber in South America and of the atrocities practiced in the remote Peruvian districts in the upper Amazon region. Speaking from personal observation, he says that all over State of Perak large tracts of jungle land have been, and are still in process of being cleared, in order to plant rubber; and there are many extensive plantations run by Europeans (both individual and companies), as well as numberless small plots owned and worked by Malays, Chinese, or Tamils. The first cuttings and seeds of *Hevea* were sent from Ceylon to the Straits Settlements, and from the trees so obtained seeds were distributed to other parts of Malaya. The first record found by the author of such specimens being dispatched is in 1877, when cuttings from one-year old trees were sent from Peradynia—this statement being apparently confirmed by the age of the largest trees which were said to be twenty-five or thirty years old. As regards the labor on the large estates, the work is usually done by Tamils, who are recruited in India and shipped over in gangs; but there is nothing like slavery about this, for they are well paid and treated, and have special officials set apart to explain to them the condi-

tions under which they are engaged and to investigate their grievances. Owing to the favorable climatic and soil conditions prevailing, trees are ready for tapping when from three to five years old, the determining factor being the size, not age. The bark is first incised when the trunk has attained a circumference of at least fifteen inches, at a height of three feet from the ground, the usual method of tapping being first a "Y" and then the "quarter herringbone." The cups in which the latex is collected are now usually of pretty highly glazed earthenware—these having superseded glass cups, they in their turn replaced tins, and these probably the original coconut-shells. The tappers go their rounds early in the morning, and the day's yield has been brought well in before mid-day. After the latter has been strained and measured, it is coagulated, usually by the addition of acetic acid. The coagulated latex, after being washed and pressed, is either made into crepe or lace, or left as sheet or biscuit rubber. In the former case, expensive and up to date machinery is used; in the latter nothing more exciting than an ordinary hand mangle is required. Before being packed the coagulated and pressed rubber is thoroughly dried and smoked, the finished product being a warm, dark red-brown color, and just transparent when held up against the light. Smoking is usually done by hanging the rubber up, or laying it on open grating shelves in a hut, and lighting a fire of coconut husks beneath. The present outlook is that in another ten years' time there will be miles of mature rubber trees in Malaya.—*Pharm. Jour. and Pharmacist*, Jan. 20, 1912, 61-62.

Oleum Ricini Sulphuratum: A New Chemical Compound Compatible with other Medicaments.—M. R. Huerre describes a new synthetic compound and the method of its preparation. It is obtained by the action of sulphur upon ricinus oil at a temperature of 140°, the reaction reaching its maximum between 155° and 165°C. When sulphur and ricinus oil are heated up to 100°, simple solution of the sulphur is effected, the latter being precipitable as such by the addition of solvents; but the product obtained at the higher temperature is apparently a distinct chemical compound, which with a content of 4.2 per cent. of sulphur no longer responds to the ordinary reactions of that element. The sulphurated oil is miscible without decomposing solutions of various substances which under

ordinary conditions are readily decomposed by sulphur. It is soluble in all proportions in acetic acid, amylalcohol (even when mixed with ethylalcohol) in either, ethylacetate, amylnitrite, amylacetate, methylsalicylic ether, many volatile oils, chloroform, carbon bisulphide, creosote, guaiacol, benzin (benzene? Rep), xylol, &c. This property, and the fact that it is not incompatible with many of the medicaments used in dermatological practice would seem to make it a valuable adjunct for the treatment of skin diseases. Thus, by means of ethereal solution, combinations with salicylic acid, pyrogallol, resorcinol, menthol, salol, thymol, &c., may be effected; in acetone solutions, oil of cade, camphor, and menthol; in chloroform solution, chrysophanic acid, pyrogallol, resorcin, &c.; in short, it may be incorporated with any of the substances named, with collodion, traumaticin, plasters, and liniments in any desired combination.—Pharm. Ztg. LVII (1912), No. 47,478; from Les Nouv. Remèdes (Paris) 1912, 193.

Olive Oil: Detection of Peanut Oil.—According to Dr. L. Adler the presence of 5 per cent. or more of peanut oil in olive oil may be detected by saponifying 1 cc. of the suspected oil with 5 cc. of 8 per cent. alcoholic potash solution in a 100 cc. Erlenmeyer flask on a boiling water bath, for four minutes, with frequent shaking; then cooling to 25°, adding accurately 1.5 cc. of a diluted acetic acid (1 vol. glacial acid, 2 vol. water) and 50 cc. of 70 per cent. (vol) alcohol, shaking well, heating, if necessary, to remove any turbidity, and then carefully cooling by immersion in cold water and with shaking until the temperature is reduced to exactly 16°C. If, no turbidity results, after occasional shaking within 5 minutes, the temperature is further reduced to 15.5° C, and if then, after waiting another 5 minutes, no turbidity results, the sample contains less than 5 per cent. or no peanut oil at all.—Pharm. Ztg. LVII 1912, No. 55,555; from Ztschr. f. Unters. d. Nahr.—u. Genussm. 23 (1912), No. 12.

Saponins: Biological Estimation in Drugs.—At the March Session (1912) of the German Pharmaceutical Society, Professor R. Kobert delivered an extremely interesting and instructive address in which he points out that the biological valuation of the active constituents of drugs (supplementary to the chemical valuation), which is now conceded to be practically indispensable in the case of digitalis, may be confidently extended with

advantage to other drugs and more particularly to those containing saponins, such as Quillaya, Senega and Sarsaparilla, for example. The physiological action of these vegetable substances is highly interesting. Applied externally the saponins exert epithelium destructive activity, and are strongly irritant, properties which have been utilized as expectorants (Senega), &c. Internally administered the saponin drugs exert diuretic and perspiratory action, and as a consequence of their irritant effect on the stomach and intestines, particularly in large doses, are capable of relieving diarrhoea and emesis. When injected into the blood vessels the saponins are shown to be powerful protoplasmic poisons, destroying the blood corpuscles and apparently dissolving them. This property Prof. Kobert now proposes to utilize for the biological valuation of drugs containing Saponins. If defibrinated blood is diluted with 50-100 times its volume of physiological salt solution and a saponin solution is then added, the opaque blood corpuscles instantly assume a lake-color and become transparent. This action is however not due to actual solution, but to the fact that the saponins combine with the cholestrin of the blood corpuscles, which then become transparent. The valuation of saponin drugs is carried out as follows.

A decoction of the air-dry drug is made in the proportion of 1:100, and this is added in successive proportions of 1, 2, 3, &c. cubic centimeters to a series of test tubes, each containing 5 cc. of a 2:100 solution of blood in physiological salt solution, followed by sufficient of the salt solution to make up the volume of 10 cc, observing in what dilution haemolytic action sets in. If in addition the activity—value of the saponins contained in the drug is known, the percentage of active substance in the drug is simultaneously determined. In this manner Prof. Kobert has determined a content of 8-19 per cent. of saponins in quillaya bark, and that the activity of the bark remains constant for years. On the other hand, in the case of Senega and Sarsaparilla a diminution of the active constituents was shown after prolonged keeping.—Pharm. Zt., LVIII (1912), No. 21, 213-214.

Saponin:—Reliability of the Haemolytic Method of its Biological Valuation.—Dr. Cesaro Sormani and also J. Rühle have made comprehensive experiments with the haemolytic method proposed by Prof. Kobert (see

preceding abstract) for the biological valuation of drugs containing saponins. The degree of hemolysis is ascertained with accuracy in the case of saponin by this method, whereas the reactions of Yamaoka as well as the various color reactions for saponin are untrustworthy.—*Pharm. Ztg.*, LVII (1912), No. 55, 555; from *Ztschr. f. Unters. d. Nahr. u. Genussm.* 23, (1912), No. 11.

Symphytum Officinale (Comfrey): Anatomy and Herbal History.—At the suggestion of Dr. J. C. Macalister, of the Royal Southern Hospital, Liverpool, who has been engaged in experimental inquiries into the therapeutical value of certain substances in the treatment of malign and malignant ulcers, and had learned that infusion or poultices made from the "roots" of comfrey have been used in some parts of the country in this relation, Prof. R. J. Harvey-Gibson, procured a large quantity of comfrey rhizomes, which were submitted to Dr. A. W. Titherley for analysis. This resulted, as described in a separate abstract (see *Allantoin*, under "Organic Chemistry") in the extraction in considerable amount of a crystalline body which was identified as allantoin, a substance by no means of common occurrence in plants (it is regarded by plant physiologists as a derivative—probably an oxidation product—of nuclein, and has as yet only rarely been identified in plants.) The clinical aspect of the subject and the results obtained from the use of allantoin in specific cases are dealt with by Dr. Macalister in a paper published in the *Brit. Med. Journ.* and are briefly described in a separate abstract. Mr. Harvey-Gibson himself contributes an admirable historical summary of the drug, its reputed virtues and uses from the time of Dioscorides to the time when, in the latter part of the 18th Century its remedial value was discredited by Woodville (*Medical Botany*, 1794) and others. The author also describes the pharmacognostic character of the drug, from which it appears that the dry material sold as the rhizome of *Symphytum Officinale* contains the massive "rootstock" and roots indiscriminately.—*Pharm. and Pharmacist*, Jan. 27, 1912, 91.

Synthetic Caoutchouc: Chemical Identity with the Natural Product.—At the recent Jubilee Meeting of the Society of German Chemists one of the most interesting topics of discussion was the advance made in the synthetic production of medicinal and technically useful products. Among the latter the

most important doubtless is the successful synthetic production of caoutchouc, the history of which was traced by C. Harries, whose personal researches within the last few years have confirmed the chemical identity of the synthetic and the natural product. While "isopren," which is regarded to be the basis of the synthetic article, has been known for 50 years, the first successful caoutchouc production was by Bouchardat and Tiiden 20 years ago, who obtained it by the action of HCl on isopren; but, strange to say, the method described has not since been confirmed as available for its production by other investigators, although priority of discovery has been conceded to the first named investigators. During the past two years the problem of its synthetic production has however been solved by Harries in collaboration with the "Elberfeld Farbenfabriken." The material from which the caoutchouc is produced consists of unsaturated hydrocarbons, which are cheaply and conveniently available, and these hydrocarbons are polymerized by a series of methods devised for the purpose, which are characterized by the author as "ozonizing methods." The chemical identity of the synthetic and natural products is demonstrated by the solubility in various solvents and a series of well-defined properties of the ozonide, which must yield on hydrolysis with H₂O the same cleavage curves and the same products of hydrolysis in the same proportions as does the natural caoutchouc. Some slight deviations from these conditions still remain to be obliterated; but the author is confident that the results so far obtained will lead to the successful production of synthetic caoutchouc, as a large industry in the near future.—*Pharm. Ztg.*, LVII (1912), No. 46, 459.

Zinc Ointment: Exact Determination of Zinc Oxide.—Dr. E. Büttner recommends the following method for the determination of zinc oxide in ointments or pastes with exactitude: From 0.5 gm. (if very stiff) to 2.0 gm. of the ointment is placed into a 150 cc. separator funnel; 30 cc. of water and 50 cc. of ether are added, and this is followed by the addition of diluted hydrochloric acid with careful shaking until the contents separate into two perfectly clear layers. The aqueous layer is withdrawn, filtered into a beaker, and the filter washed with four portions of 30 cc. of water each with which the ether solution of the fats has been previously washed. From the aqueous filtrate and wash-

ings the zinc is then precipitated as carbonate and from its weight the oxide may be calculated.—Pharm. Ztg., LVII (1912), No. 55, 555; from Südd. Apoth. Ztg., 1912, No. 33.

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Wheibley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

<>

REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

- 100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.
- 200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.
- 50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.
- 100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.
- 200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.
- 50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.
- 100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.
- 200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio

RESENTING GRATUITOUS INSULTS TO PHARMACY AND PHARMACISTS.

It has been a favorite doctrine of the Editor for many years that pharmacists invite attacks from the sensational press by failing to protest against them when made.

The same element of human nature that lead the ancient Romans to crowd the gladiatorial amphitheatre leads them to buy the sensational newspaper. They want to see somebody get "spilicated." The publishers know this, and as a policy they select the man or class who can't or won't hit back. They have found this quality prevailing among pharmacists generally, and so pharmacy comes in for an abundant share of gratuitous and wholly unmerited vilification.

The way to change the policy of the press on this subject is for pharmacists to change their attitude of quiescent acceptance to one of indignant remonstrance against such unjust attacks.

In this connection we quote the following letter by one of our members to the New York Times:

To the Editor of the N. Y. Times:

In last Sunday's N. Y. Times, an editorial appears under caption, "Senna, Broken, U.S.P." Judge Learned Hand being quoted: "The Pharmacopoeia is a book put into the hands of druggists all over the country, men of no great learning—"

Webster defines the terms, druggist, apothecary and pharmacist synonymously, hence the assumption that the pharmacist is the one referred to. It is very regrettable that one of the judiciary should cast an uncalled-for slur upon a calling which is a profession, and moreover one which carries with it the greatest responsibilities, life and death, the latter not being subject to review and reversal because of error, for error with the pharmacist, may mean death to the patient, and extinction of the pharmacist's professional career. Callings of this kind are not left to the illiterate. Furthermore in proof of the aforesaid would I point to the U. S. Pharmacopoeia itself, which though not perfect, still is the best book of its kind extant, and its contents are the product of the American druggist. I hope the learned gentleman may become acquainted with some druggists, that is socially, not professionally, for we wish him no ill, and he will find as many bright and learned heads in our profession, as he may find in the legal one.

J. F. BEHRENS.

Possibly the Editor of the Times did not lose any sleep over this single remonstrance, but if any considerable number of the drug-

gists in his territory had remonstrated in like manner, the result would probably have been quite different.

The way to get proper recognition for pharmacy is to go after it, go after it hard, go after it all together, and go after it all the time. Remember Grant's doctrine, that the other fellow is as likely to be as much afraid of you as you are afraid of him.



ENACTMENT OF THE SHERLEY BILL.

The Sherley Bill, amending the Pure Food and Drugs Act, is now a law. It consists in the addition of a third clause to Section 8 of the enactment of June 30, 1906, the exact language of the new addition to the law being as follows: (A drug shall be deemed misbranded.)

"Third, If its package or label shall bear or contain any statement, design or device regarding the curative or therapeutic effects of such article or any of the ingredients or substances therein which is false and fraudulent."

As is well known, the necessity for such an amendment was pointed out by the decision in the so-called "Johnson Cancer-Cure" case, in which it was decided with evident correctness that the Food and Drugs Act, as it then stood, did not cover fraudulent claims as to the curative properties of medicines.

There can be no doubt but that the amendment greatly strengthens the law, and will make it fairly effectual in restricting extravagant claims for the properties of medicines which are sold in interstate commerce.

It cannot but be regretted, however, that the Richardson Bill as proposed to be amended by the Legislative Conference of the national pharmaceutical societies was not enacted instead.

The writer has never shared the fears of those who believed that the enactment of this bill would have been detrimental to the interests of legitimate pharmacy and medicine. It is no doubt true, as asserted that in the hands of executives who were extremists such a law might have occasioned a great deal of unnecessary hardship, but this statement would apply equally to every law which is draughted in such terms as will permit of effective enforcement.

The infirmities of language are such that if we should enact only laws which could not

by technical construction be used to produce hardship they would be of but little consequence. The same loophole which will permit the escape of those who offend only innocently and technically will also permit the escape of the intentional wrong doer.

If laws are to be effective they need to contain some general and absolute terms, and we must rely upon the spirit of fairness of executives and upon the powers of the courts to prevent their administration with undue harshness.

The Bulletin Board

THE NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

Annual Meeting, Milwaukee, Wis., October 14-19, 1912.

To the Members of the N. W. D. A.

You have been advised by the Committee on Arrangements and Entertainment that our 38th Annual Convention will be held October 14-19th at the Hotel Pfister, Milwaukee, Wisconsin. The Committee and the Officers of the Association hope to see a large attendance, and the purpose of this call is to urge our members—active, associate, honorary and complimentary—to be present with their companions.

Not only has the Committee provided liberally for the comfort and pleasure of its guests, thus assuring them a pleasant visit and an enjoyable entertainment, but the individual member will find in the deliberations of the Convention, particularly in its consideration of the momentous trade questions of the day, much of direct benefit to himself. It is our opinion that no member, no matter how important he may consider his engagements at home, can afford to lose this opportunity to broaden his views.

Trusting, then, that the members will be present at the coming meeting in numbers never equalled before, we await in anticipation the benefits and pleasures of the Milwaukee meeting.

Meanwhile, I remain

Yours very truly

THEO. F. MEYER,

President.

A POSSIBLE PLACE FOR THE A. PH. A. HISTORICAL COL- LECTION.

The following is a copy of a bill introduced into the House of Representatives, (U. S.) and known as H. R. 19,224 by Mr. Turnbull. By slightly extending its scope, the exhibit might be enlarged to provide a place for the preservation and display of collections illustrating the history and development of the various arts and professions not now cared for by the National and other museums:

A BILL.

TO PROVIDE FOR A PERMANENT EXHIBIT OF THE RESOURCES OF THE UNION IN OR NEAR WASHINGTON, DISTRICT OF COLUMBIA.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there shall be appointed a commission consisting of the Secretary of State, the Secretary of War, and the Secretary of the Treasury, and four other persons to be appointed by the President, whose duty it shall be to investigate, consider, and report, by bill or otherwise, to Congress, its findings and recommendations regarding the practicability of installing and maintaining, in or near the city of Washington, District of Columbia, a permanent exhibit illustrative of the natural industrial, and educational resources of the various States of the Union.

SEC. 2. That the Secretary of State, the Secretary of War, and the Secretary of the Treasury shall be known as honorary commissioners as created by this Act, and shall receive no compensations as such.

SEC. 3. That each of the four commissioners appointed by the President shall receive compensation at the rate of four thousand dollars per annum. That at least two of the commissioners thus appointed shall be men well versed in exposition theory and practice.

SEC. 4. That the said commission shall have the power to employ clerks, and stenographers, send for persons and papers, and do all things necessary for the carrying out of its objects.

SEC. 5. That the sum of twenty-five thousand dollars, or so much thereof as may be necessary, is hereby appropriated out of any of the moneys in the Treasury not otherwise appropriated, to be paid out on the audit of the chairman or acting chairman of the said commission. Said appropriation shall be immediately available.

<>

THE MILITARY PHARMACISTS.

Enactment of the Hughes-Bacon bills to improve the status and increase the efficiency of the military pharmacists is a matter which

directly affects every pharmacist in the country. Fuller recognition by the Federal authorities of the status of the pharmacist as a professional man, is a matter of vital importance to all of us, whether or not in the Government services. The physician, the dentist or the lawyer are all accorded a rank superior to that of the pharmacist in the military service; who alone is relegated to non-commissioned rank while the others hold rank as commissioned officers with all the prestige which that status accords.

While the Hughes-Bacon bills do not contemplate commissioned rank for military pharmacists, they do provide for a salary more commensurate with their qualifications and responsibilities; thereby setting a standard which will do much to elevate professional pharmacy both in and out of military circles. Any legislation which contemplates an improvement in the status or allowances of pharmacists tends to a higher standard of efficiency and therefore merits the support of all pharmacists, even though they may not be individually affected.

An appreciable proportion of the military pharmacists, a greater number than from any other branch of the Federal government, are members of the American Pharmaceutical Association. These men are, by military regulation, debarred from any political activity on their own behalf; although the Surgeon General of the Army has urged on the War Department enactment of legislation identical with that provided for in the Hughes-Bacon bills. Every member of the Association should therefore consider it a professional obligation to do all in his power to aid these fellow members in obtaining a long delayed recognition of their professional status and responsibilities.

It is urged upon all members of the Association to secure the support of the senators and representatives from their States to the bills (H. R. No. 22263, and S. No. 5725) which are now in the House and Senate Military committees.

<>

PHYSICIANS FAVOR DISTINC- TION BETWEEN PHARMA- CIES AND DRUG STORES.

In a recent issue of the Journal of the American Medical Association, there was an interesting article regarding the distinction between Pharmacies and Drug Stores, the

former being run and supervised by Pharmacists, the latter by Druggists. It says a pharmacy should be fitted and equipped so that it can fill physicians' prescriptions and do scientific and ethical work, and that drug stores, of course, should devote their time to the selling of patent medicines, cigars, soda water chewing gum, and we may add bandages, cotton, in other words all articles that in case a druggist make a mistake he would not harm any one.

We agree with them in every way and manner. We believe that a pharmacist is a professional man, and should do professional and ethical work only, work that benefits the public as well as the physician. We have no more right to do unprofessional work than a physician.

We know that pharmacies can be limited in number by legislation and will be perfectly constitutional on the ground that it benefits the public. Pharmacists in America should be on equal rank and be given equal protection as those of Europe. What is holding us back? Physicians are in favor of it, pharmacists are in favor of it, the public not only favors it, but expects it.

The answer is honest and beneficial legislation. When we get it pharmacists will be limited in number by law.

OTTO ZEMAN.

<>

PEPARING FOR NEXT YEAR'S MEETING.

Association meetings are over for this year but it is time to begin getting ready for next year's meetings now. The real problem for most druggists is how to meet the expense of attendance, and no one need be ashamed to admit that this expense is a real reason why he does not attend association meetings, but if a little economy be practised and a determined effort made it will be easy for every druggist to attend some meeting. A few dollars put aside monthly between now and next summer will provide the means for attendance, a hundred dollars will take one a long way, and no one need fear the expense of social display, for druggists are not usually "malefactors of great wealth" and avoid high-priced hotels and display. Begin saving now; it will be the best and most profitable saving one can do. —*American Druggist*.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

<>

NASHVILLE BRANCH.

PRELIMINARY WORK FOR BIG CONVENTION —
NASHVILLE BRANCH PHARMACEUTICAL
ASSOCIATION MEET WITH INDUS-
TRIAL BUREAU.

In response to a call issued by the Tennessee Industrial Bureau to the druggists of the city, a joint meeting with Nashville branch of the American Pharmaceutical Association was held Thursday afternoon in the board of trade rooms. The object of the meeting was to begin preparations for the reception of the American Pharmaceutical Association which recently decided to meet here next year.

Dr. J. O. Burge called the meeting to order and read many letters from members of the association in various parts of the country extending their congratulations to Nashville for capturing the convention for next year.

Secretary A. P. Foster, of the Industrial Bureau, in addressing the meeting, said that he felt proud that through the efforts of the bureau Nashville had secured such a large and honorable body of men to meet here. The bureau did not invite all conventions to meet here. Only the good ones are wanted. The American Pharmaceutical Association was especially desirable. The good accruing to Nashville from such a meeting would be far reaching, he said. He pledged the support of the Industrial Bureau, the board of trade and other business organizations in entertaining them.

Dr. G. W. Hubbard and Dr. C. C. Young gave glowing reports of the recent meeting of the association at Denver which they at-

tended and they felt sure there will be no cause to be ashamed of Nashville. Enthusiastic talks on behalf of the association were made by Drs. Ira B. Clark, R. L. Eves, S. C. Davis, E. A. Ruddiman, J. D. McDaniel, Earl Kemper, G. W. Hubbard, W. R. White and others.

Ira B. Clark was appointed chairman of the membership committee which will begin a strong canvas of the entire south for new members.

The other necessary committees will be selected at the next meeting, October 10, when active work will begin in preparation for the entertainment of the association.



ST. LOUIS BRANCH.

St. Louis Branch held a special meeting at Anheuser-Busch Brewery on Thursday afternoon, September 19, and under the able guidance of Messrs. John Appelt and F. W. Seibel, the following made a general inspection of the plant: F. H. Hambroek, W. W. Moxley, W. O. Luton, Charles E. Dyer, C. D. Dillard, J. W. Thomas, W. P. Overstreet, A. A. Saavadra, Wm. Fredericks, O. F. Foehner, H. J. Stolle, P. L. Gain, H. G. Vallance, John Wasem, Arthur Schulte, C. R. Rhodes, Delta E. Combs, Charles Geitner, Louis Lieberstein, Wm. J. Meisburger, W. J. Lischen, P. Hanser, G. J. Riley, F. Kincaid, George Rawleigh, T. E. Armstrong, G. Gibson, W. Price, A. F. Raker, F. W. Stuart, F. K. Dillman, G. C. Whitmore, Wm. H. Lamont and J. W. Mackelden.

The next meeting of the Branch will be held at the St. Louis College of Pharmacy, 2108 Locust street, on Friday evening, October 19. WILLIAM H. LAMONT, Sec'y.

FINDING THE WEAK SPOT.

Maybe you've spent half an hour showing a line of goods to a customer, discussing their merits and his particular needs — and at the end of it all, he's trotted out without dropping a single sou-markee into your mite-box. That's an experience that hits us all, at regular intervals, and pretty generally releases the lever of our mental cussograph, too.

Next time you miss a sale in that mysterious way, take a few quiet minutes to your-

self and puzzle out the mystery. How did that customer look upon you and your goods. What was wrong with your line of talk. Where did you trip over yourself. Why did the goods fail to meet his particular needs. Did you have more suitable goods — and if you did, why didn't you think of them and push them. If the goods you did offer should have suited, what manner of presenting your case would have landed the sale.

That kind of self-analysis will disclose amazing weakness in the selling methods of the best of us. Put your finger on those weaknesses, and it's a mighty simple matter to improve. The percentage of lost sales will rapidly decline. The problem is — find out what's wrong. Once you've settled what's wrong, it's easy to find a remedy.—*Western Druggist*.

THE MENTAL DANGER LINE.

When we come to sheer hard work with the brain, we are close to the danger zone for many a business man or factory head. Attention to one thing or one line of thought is a strain very like excitement so far as the effects are concerned. It takes more blood to supply a hardworked brain than it does for the same brain when it is tranquil. An excited man finds that his temples are throbbing. More blood is needed because the waste of tissue is greater. Nature here endeavors to introduce a sort of economy. Close attention causes many external impressions to be shut out from the consciousness.

The process of shutting out external impressions assists in maintaining attention, but while it helps the worker for a time, it has its effect on the brain. Cats, both large and small, which lie in wait for their prey, develop such concentration of attention as practically to deaden the other faculties. When in this state hunters can usually approach them without being perceived. A man may work hard amid noise and disorder, but in time fatigue appears as nature's protest against the strain of work, the noise and the distractions caused by the disorder, and the attention automatically slackens.—G. S. HODGINS.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



HILAND FLOWERS.

Hiland Flowers died at his home in the Bronx, New York, on August 12, 1912, aged fifty-six years. Mr. Flowers was a graduate of the Philadelphia College of Pharmacy, class of 1876. A few years after graduating he went to New Orleans where he was superintendent of the Laboratory for the wholesale drug firm of E. J. Hart & Co. While there he assisted in organizing the Louisiana State Pharmaceutical Association, and was its first Recording Secretary. After being proprietor of a drug store on St. Charles Avenue, New Orleans, for several years, he removed to New York City. Finding indoor employment injurious to his health he became a traveling salesman, and at the time of his death was connected with the firm of Henry K. Wampole & Co., Manufacturing Pharmacists, of Baltimore, Md.

Mr. Flowers was a member of the New York branch of the American Pharmaceutical Association, and deeply interested in everything pertaining to pharmacy and chemistry.

He had unusual mechanical and literary talent. A pressure percolator bearing his name is illustrated and described in the Proceedings of the American Pharmaceutical Association for 1910. He contributed also a table to Martindale and Westcott's Extra Pharmacopoeia, showing the relative powers of various antiseptics and disinfectants.

J. W. E.



HENRY WEIMAR.

Henry Weimar, of Hot Springs, Ark., died of valvular heart disease at Appleton, Wis., on Sunday, July 28, 1912, the home of his boyhood. Mr. Weimar was born on a farm near Milwaukee, in 1867, and went to Appleton as a small boy. He attended the public schools and was a graduate of the University of Wisconsin. After attending a college of

pharmacy in Chicago, from which he was graduated, he located in Hot Springs, Ark., about twenty years ago, and became one of the most prominent citizens of that health resort. He was a charter member of the Hot Springs Lodge of Elks, vice president of the Arkansas State Board of Pharmacy, a former alderman of his city, and for years identified with pharmaceutical organization work. He became a member of the American Pharmaceutical Association in 1907. The members of the American Pharmaceutical Association who attended the Hot Springs meeting of the American Pharmaceutical Association in 1908 will ever remember his genial personality and cordial hospitality. The funeral was held at Appleton, where interment was made.

J. W. E.



JACOB BAUR.

Jacob Baur, President and Treasurer of the Liquid Carbonic Company, died at Michael Reese Hospital, Chicago, on the night of July 19th following an operation for malignant intestinal trouble.

Mr. Baur was born at Louisville, Ky., October 12, 1856. After a public school education he began, at the age of 14, as a clerk in his father's drug store at Terre Haute, Ind. He graduated at the Philadelphia College of Pharmacy in 1881, and for some years afterwards was the manager of the Baur Pharmacy at Terre Haute. At an early date he saw the possibilities of soda water as a side line for druggists, and directed especial attention to the development of processes for the liquefying and transportation of carbon dioxide for soda fountain use. This led to the formation of the "Liquid Carbonic Company" and the establishment of laboratories, in 1888.

The Company grew rapidly from the start, added the manufacture of soda water syrups and flavors, soda fountains and soda apparatus generally, until the firm became one of the largest and most prosperous in the soda fountain industry.

Mr. Baur became a member of the A. Ph. A. in 1879, and to the last maintained a keen interest in the welfare of the Association and was a diligent student of the Proceedings and Bulletin, utilizing many of the suggestions there found in the development of his business.

He leaves a widow and infant daughter. Interment was made at Terre Haute, Ind., July 22d.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,
From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

OSCAR GABSCH,
From 3036 O St., Washington, D. C.
To 1729 13th St., Washington, D. C.

H. M. BILLINGS,
From South Poland, Maine.
To 28 W. 50th St., New York, N. Y.

JOS. YOUNG DENDY, Sgt. H. C. U. S. A.,
From Camp Jossman, Guimaras, P. I.
To Camp McGrath, Batangas, P. I.

J. C. HERMANEK,
From First National Bank Bldg., Chicago, Illinois.
To 4016 W. 26th St., Chicago, Ill.

EDW. W. FERGUSON, Sgt. H. C. U. S. A.,
From Camp Jossman, Guimaras, P. I.
To Camp McGrath, Batangas, P. I.

WM. C. WENDT,
From 367 S. 4th St., Columbus, Ohio.
To 47 S. High St., Columbus, Ohio.

A. DIEDRICH,
From 336 4th St., Union Hill, N. J.
To 963 Summit Ave., Jersey City, N. J.

OTTO E. BRUDER,
From 1021 Wolfram St., Chicago, Ill.
To 2838 Sheffield Ave., Lakeview Sta., Chicago, Ill.

E. WUNDERLICH,
From 1415 Dryades, New Orleans, La.
To 1532 Dryades, New Orleans, La.

F. O. TAYLOR,
From 659 2d St., Detroit, Mich.
To 53 Walex, Detroit, Mich.

U. S. BUREAU OF PUBLIC HEALTH SERVICE.

(Recent Changes in Pharmacists' Assignments, etc.)

Sterns, C. O., Pharmacist. Granted 24 days' leave of absence from July 22, 1912.

Macdowell, W. F., Pharmacist. Granted 30 days' leave of absence from August 10, 1912.

Maguire, E. S., Pharmacist. Granted 30 days' leave of absence from August 5, 1912.

Ott, C. R., Pharmacist. Granted 20 days' leave of absence from July 27, 1912.

Stearns, W. L., Pharmacist. Granted 30 days' leave of absence from September 2, 1912.

Scott, E. C., Pharmacist. Granted 17 days' leave of absence from August 12, 1912.

Bell, J. M., Pharmacist. Granted 15 days' leave of absence from August 14, 1912.

Berkowitz, M. E., Pharmacist. Granted 20 days' leave with pay from August 15, 1912.

Clyde Ritter appointed a pharmacist of the third class August 5, 1912.

Claude H. Parker appointed a pharmacist of the third class August 5, 1912.

Smith, Luther C., Pharmacist. Promoted to pharmacist of the second class, to date from December 19, 1911.

Wolfe, J. Albert, Pharmacist. Promoted to pharmacist of the second class, to date from July 24, 1912.

Carlton, C. G., Pharmacist. Granted 16 days' leave of absence from August 18, 1912.

Ott, C. R., Pharmacist. Leave of absence for 20 days from July 27, 1912, amended to read "12 days leave of absence from July 27."

Osborn, J. L., Pharmacist. Granted 90 days leave of absence without pay from August 13, 1912.

Smith, L. G., Pharmacist. Granted 23 days' leave of absence from September 10, 1912.

Berkowitz, Morris E., Pharmacist. Leave of absence, with pay, for 20 days from August 15, 1912, and 5 days, without pay, from September 9, 1912, amended to read "20 days' leave of absence with pay, from August 21, 1912, and 5 days' leave of absence, without pay, from September 11, 1912."

Slough, Charles, Pharmacist. Relieved from duty at Pensacola quarantine station and directed to proceed to Louisville, Ky., and report to the medical officer in command of the

marine hospital for duty and assignment to quarters August 29, 1912.

Hepler, G. K., Pharmacist. Upon arrival of Pharmacist Charles Slough, relieved from duty at Louisville, Ky., and directed to proceed to Baltimore, Md., and report to the medical officer in command of Marine Hospital for duty and assignment to quarters.

Seidell, A., Technical Assistant. Detailed to attend the International Congress on Applied Chemistry to be held in New York, N. Y., September 3-4, 1912.

Hunt, Reid, Professor of Pharmacology. Detailed to attend, as delegate on behalf of the United States, the International Congress on Applied Chemistry to be held in New York, N. Y., September 6-13, 1912.

Franklin, E. C., Professor of Chemistry. Detailed to attend, as delegate on behalf of the United States, the International Congress on Applied Chemistry to be held in New York, N. Y., September 6-13, 1912.

SOMEWHAT ASTRINGENT.

A New Jersey druggist writes the editor of the *American Druggist* in this fashion:

SIR—I do not know the condition of pharmacy in South Dakota, but I do know that the remarks of Dr. C. W. Drew as printed in the *AMERICAN DRUGGIST* for May will have about as much effect in this part of the country as throwing a handful of salt in the sea. We know that the U. S. P. does not provide for quality of soda syrups, ice cream, etc., nor does it give formulas for sundaes or other lunches or desserts; it does not tell how to fry oysters, or provide for standard of stationery, or confectionery, or cigars. These are the things that pharmacy has degraded to in this section. Pharmacy is relegated to the past—obsolete—so far as the haberdashery drug store of today is concerned. There are a few big laboratories scattered over the land, that long ago tied ropes around the throat of pharmacy, and have gradually dragged it to themselves, blotting out the individual—it is going! going! almost gone. The pharmacopœia in use in the drug store today!

Shades of Procter, Parrish, Wood and Bache! They would turn in their graves did they know to what depths their noble calling had fallen. My dear Dr. Drew, you can find plenty of drug store employees who have never even seen the pharmacopœia, and more than a plenty stores that do not possess one. Of those that do have one we will venture the statement that it is a book rarely referred to and will not show the stain of actual use. Show me a store where the pharmacopœia is the dirtiest and shabbiest book in the place and I will show you a pharmacy.

Pharmacy and medicine are on the retrograde; the plumber and boards of health have done more in late years to mitigate disease than has medicine as now practised. Will pharmacy ever come into its own again? It might, but it is doubtful, for the means of resurrection would be so drastic that it would never be undertaken.

QUERCUS ALBA.

MINNESOTA OLEO LAW UNCONSTITUTIONAL.

The oleomargarine law passed at the last session of the Minnesota Legislature, prohibiting the coloring of "oleo" to make it resemble butter, is unconstitutional. This was decided May 31 by the State Supreme Court in the case brought by the state against Ole Hanson, a Mankato (Minn.) merchant.

In its decision the Supreme Court said: "Oleo may be made of several different shades. The article that the defendant was convicted of selling was intentionally made of a deeper yellow. The motive is plain—the consumer will not buy the lighter colored article. The sales of this are but 10 per cent. of the yellow article, while the price is the same. There can, however, be no intent to deceive the purchaser or consumer, as the provisions of the law concerning labels on packages and wrappers are fully complied with."

The case was fought by a Chicago packing firm.—*The American Food Journal*.

Importance of Biological Business

The distribution of Biological Products has assumed such large proportions that no druggist can afford to neglect this very profitable branch of his business.

To win the Biological business in your community:

Carry a complete stock of the Mulford Biological Products. Keep your stock in a refrigerator at low temperature. Give **prompt** and **careful** attention to all prescriptions and orders for Biological Products. Install a special biological refrigerator, designed and built expressly for Mulford distributors.

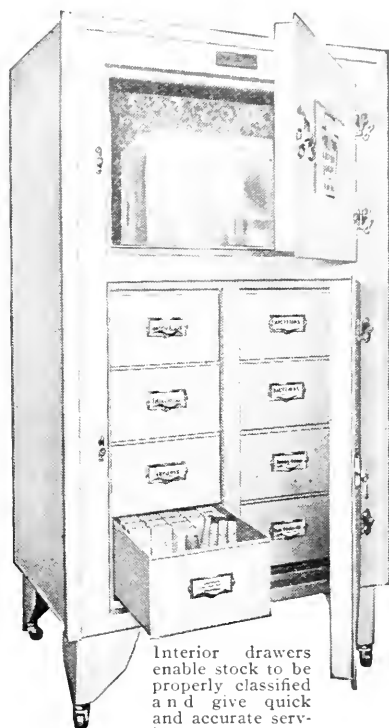
We shall be glad to inform you how to purchase one of these refrigerators from the manufacturers. We have arranged with them for special prices to our distributors on these white enameled refrigerators. (See illustration.) This up-to-date service will afford better protection to yourself, to the physician and to his patients. It will increase your business and add to your reputation for intelligent and proper service. Write today for particulars.

The Three Essentials!

Supply Mulford Biological Products.—Prepared and rigidly standardized under the personal direction of experts.

Prompt Service, made possible only with a complete stock and quick deliveries. Biologicals are for emergencies and the druggist should be prepared to meet them promptly. The Mulford list is the most complete one.

The Proper Storage of Biological Products is most important, and physicians are constantly becoming more insistent in their demands for care in this respect. All **Biological Products** retain their potency longer, and therefore give better results, if stored in a suitable refrigerator or at low temperature.



Interior drawers enable stock to be properly classified and give quick and accurate service.

Experiments by Dr. John F. Anderson (U. S. Hyg. Lab. Bull., No. 66, June, 1910), show that:

Antitoxin kept	1 year	lost	16.4%	at	room temperature
Antitoxin kept	1 year	lost	8.8%	at	41° F., refrigerator temperature
Antitoxin kept	2 years	lost	25.8%	at	room temperature
Antitoxin kept	2 years	lost	12.9%	at	41° F., refrigerator temperature

Extensive studies with Smallpox Vaccine by Dr. W. F. Elgin (Md. Med. Jour., Feb., 1907), show that:

Vaccine kept at	140° F.	was killed in	5 minutes.
"	132° F.	was weakened in	5 minutes.
"	98° F.	was killed in	3 days. (About the temperature if carried in the pocket.)
"	70° F.	was weakened but not killed in	1 to 3 weeks.
"	50° F.	was active	3 to 6 months (above refrigerator temperature).
"	10° F.	was active for	4 years.

These figures clearly prove the necessity of keeping Antitoxins and Vaccine in a cool place.

H. K. Mulford Co., Chemists, Philadelphia

New York
Chicago

St. Louis
Atlanta

New Orleans
Kansas City

Minneapolis
San Francisco

Seattle
Toronto

Now is the time for Antitoxin and Vaccine business. Keep your stock up.

PHILADELPHIA COLLEGE OF PHARMACY

FOUNDED 1821

Offers a complete course in Pharmacy, Chemistry, Materia Medica, Botany and Pharmacognosy leading to the degree of Doctor in Pharmacy.

Also instruction in special branches and Post Graduate work.

For full information regarding entrance requirements, tuition, etc., address

J. S. BEETEM, Registrar, 145 N. 10th St., Philadelphia, Pa.



When your customers ask for
Cement they want

MAJOR'S CEMENT

It mends everything and
sticks to everything but
the druggist's shelves.
Sells too fast to stick there.

Send for advertising matter
and free offer

Major Manufacturing
Company

461 Pearl St., NEW YORK CITY

SPECIAL ATTENTION.—Drug stores (snaps) for sale and trade in 48 states. Drug stores handled. Drug jobs in 48 states. Physicians, dentists, veterinarians, nurses furnished and located. Established 1904. Strictly reliable. Gilt edge references. Let me know your wants. F. V. KNIEST, R. P., Omaha, Nebr.

United States Pharmacopoeia

EIGHTH REVISION

Cloth \$2.50

Sheep \$3.00

Any Book Dealer or Wholesale Druggist

SAL LAXA S & D

You know the formula

It's on the label in full

We know the drugs used are pure

and are combined in the right proportion

Thousands of physicians know that

Sal Laxa S & D is

the ideal, palatable, saline laxative

Three sizes, \$2, \$4, \$8. Your Jobber can supply it

SHARP & DOHME, Baltimore

New York

Chicago

St. Louis

Atlanta

New Orleans

Philadelphia

The Roessler & Hasslacher Chemical Co.

100 William Street, New York

invite the attention of the Pharmaceutical Profession to their new series of

Peroxygen Products, or Active Oxygen Preparations

VIZ:

SODIUM PERBORATE, a powder which, dissolved in water, furnishes instantaneously **Hydrogen Peroxide Solution** of alkaline reaction, a non-irritant to mucous membrane, even if applied in powder form. The powder is eight times as strong as ordinary H_2O_2 .

ZINC PEROXIDE, odorless fine powder, antiseptic, bactericide, used in surgery, dermatology, etc.

MAGNESIUM PEROXIDE, for internal use, non-toxic tasteless powder, it replaces bismuth salts in intestinal disinfection.

CALCIUM PEROXIDE, antacid and germicide.

STRENTIUM PEROXIDE, a dermatological agent.

PEROXIDE ZINC SOAP, U. S. Patent 787776, "Life to the Skin," contains actually 10% $Zn O_2$, the only real Peroxide Soap, complying with requirements of National Pure Food and Drugs Act. An Ideal Skin and Toilet Soap.

All the above have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

ORDERS FILLED BY THE WHOLESALE DRUG TRADE.

To Colleges of Pharmacy

Do you know that we make a specialty of importing "DUTY-FREE" glassware, apparatus and chemicals for colleges and universities—sending our own representative abroad each year to make our selections?

Do you realize that the German glassware is immensely superior to the American product, and costs much less?

Do you realize how little trouble it is to import your goods? No more than to order from a local dealer.

Tell us what you want—select from any catalogue—and we will quote figures that will surprise you.

THE KAUFFMAN-LATTIMER CO.
COLUMBUS, OHIO

THE SCHOOL OF PHARMACY of the UNIVERSITY OF ILLINOIS

CHICAGO COLLEGE OF PHARMACY

The Fifty-third session begins September 17, 1912.

Courses leading to the degree of Graduate in Pharmacy and of Pharmaceutical Chemist are offered.

For announcement or other information, address

W. B. DAY, Actuary

Michigan Boulevard and Twelfth Street, Chicago, Illinois

PITTSBURGH COLLEGE OF PHARMACY SCHOOL OF PHARMACY UNIVERSITY OF PITTSBURGH

Offers a two years course leading to the degree of Graduate in Pharmacy.
Three years for the degree of Doctor in Pharmacy.

For catalogue address Dr. J. A. Koch, Dean, Pittsburgh, Pa.

DEPARTMENT OF PHARMACY—UNIVERSITY OF MARYLAND (MARYLAND COLLEGE OF PHARMACY 1841-1904)

Lombard and Greene Sts., Baltimore Md.

Complete Course of Lectures and Laboratory Instruction, covering two sessions of thirty-two weeks each. Catalogue giving full information mailed on application to the Dean.

THE NATIONAL FORMULARY

The Standard of the Food and Drugs Act

In Cloth Binding, plain	\$1.50 per copy
In Cloth Binding, interleaved	1.75 per copy
In Sheep Binding, plain.....	1.85 per copy
In Sheep Binding, interleaved	2.00 per copy

For Sale by Book Dealers and Wholesale Druggists



It's either ORIGINAL or it isn't
 It's either GENUINE or it isn't
 It's either HORLICK'S or it isn't
 ORIGINAL---GENUINE

MASSACHUSETTS COLLEGE OF PHARMACY

CORNER OF ST. BOTOLPH AND GARRISON STREETS : : : BOSTON, MASS.

The year begins the last week in September and ends the third in May.

Offers courses of instruction covering two and three years, and confers the degrees of Doctor of Pharmacy (Pharm. D.) and Pharmaceutical Chemist (Ph. C.).

A general education equivalent to the completion of one year in a high school, as shown by certificate or examination, is required for entrance.

Open to both sexes. All courses have compulsory laboratory work connected.

The demand for graduates of this school is in excess of the supply

SCHOLARSHIPS. The Massachusetts State Pharmaceutical Association, the Eastern Drug Co., the Brewer & Co., the Robert W. Greenleaf and the Julian W. Baird Scholarships are open to students of the school.

EMPLOYMENT. On application from prospective students the Dean will be pleased to assist in securing situations in drug stores, where the students will be allowed the necessary time to attend one or more courses.

For further information and catalogue, write to

THEODORE J. BRADLEY, B. S., Ph. G., Dean

A BRITISH OPINION.

Concerning the dispensing of impure drugs by medical practitioners in the United States some forcible language was used by the contributor of a paper at the thirty-fourth annual meeting of the New York State Pharmaceutical Association. The author stated that examinations of some of the drugs purchased showed that many of the preparations purchased by doctors for distribution to their patients were deficient in the main ingredients. An American contemporary estimates that 70 per cent of the drugs prescribed by doctors are compounded by them and not dispensed on prescriptions by pharmacists. If this estimate is even approximately correct, it would, as our contemporary states, seem the height of absurdity that the vast machinery of the various national and state food and drug bureaus should be directed solely to the supervision of the purity of the 30 per cent of these drugs which reach the public through the pharmacist, while the 70 per cent which reaches the public through the physician direct goes practically uncensored.-Pharmaceutical Journal and Pharmacist.

A GOOD INVESTMENT

¶ Complete Sets of the Proceedings of the American Pharmaceutical Association are becoming rare.

¶ No other set of volumes relating to the pharmaceutical Science of equal comprehensiveness is available in the English language.

¶ In a few years complete sets will sell at a high price, and the purchase of them now will be a good investment from the financial standpoint alone.

NOTE THE DISCOUNTS

For any more than thirty-two volumes a discount of *sixty percent*.

For any twenty-three to thirty-two volumes a discount of *fifty percent*.

For any sixteen to twenty-two volumes a discount of *forty percent*.

For any nine to fifteen volumes a discount of *thirty percent*.

For any four to eight volumes a discount of *twenty percent*.

For any two or three volumes a discount of *ten percent*.

PRICES OF VOLUMES IN STOCK ARE AS FOLLOWS

		Paper Cover	Cloth Bound
1851, 1852, 1853, 1854, 1855.....	each	\$0 13	\$....
1857.....	"	20	25
1858, 1864, 1865.....	"	38	....
1858, 1860, 1862, 1863, 1864, 1865.....	"	....	50
1866, 1867, 1868, 1869, 1870, 1871, 1872, 1873...	"	50	75
1874, 1875, 1876, 1877, 1878, 1879, 1880, 1881, 1882, 1883.....	"	1 25	1 50
1884, 1885, 1886, 1887.....	"	1 75	2 00
1888, 1889, 1890.....	"	2 50	2 75
1891, 1892, 1893.....	"	5 00	5 50
1894.....	"	6 00	6 50
1895.....	"	5 50	6 00
1896 to 1910.....	"	5 00	5 50

COMPLETE YOUR SETS NOW

ADDRESS

J. H. BEAL, General Secretary, Scio, Ohio

COMPARE YOUR PRICE LISTS

A CAREFUL STUDY

*Practically
85%
Of
Lilly
Products
Are
Subject
To
Best
Discount
40%
Through
Your
Jobber*

*Study
The
Parts
Of
Other
Lists
Subject
To
"Best"
Dis-
counts*

of our price list will show you that a very large percentage of your pharmaceutical requirements are subject to 40 per cent. discount without contract obligation, through your jobber. Net prices to all retailers on articles in PART II., which is relatively small, are on the same net basis as commonly given by competitors to their preferred customers who are under contract to buy a given quantity direct within a specified time.

IN VIEW OF THESE FACTS

does it seem wise to obligate yourself to buy a large amount of pharmaceuticals direct from the manufacturer within a definite period when such low and liberal terms can be secured at any time through your jobber by specifying Lilly?

COMPARE PRICE LISTS

STUDY your past purchases and see if Lilly specifications through your jobber will not help you to keep better stock, lower your liabilities and give you more cash at the end of the year.

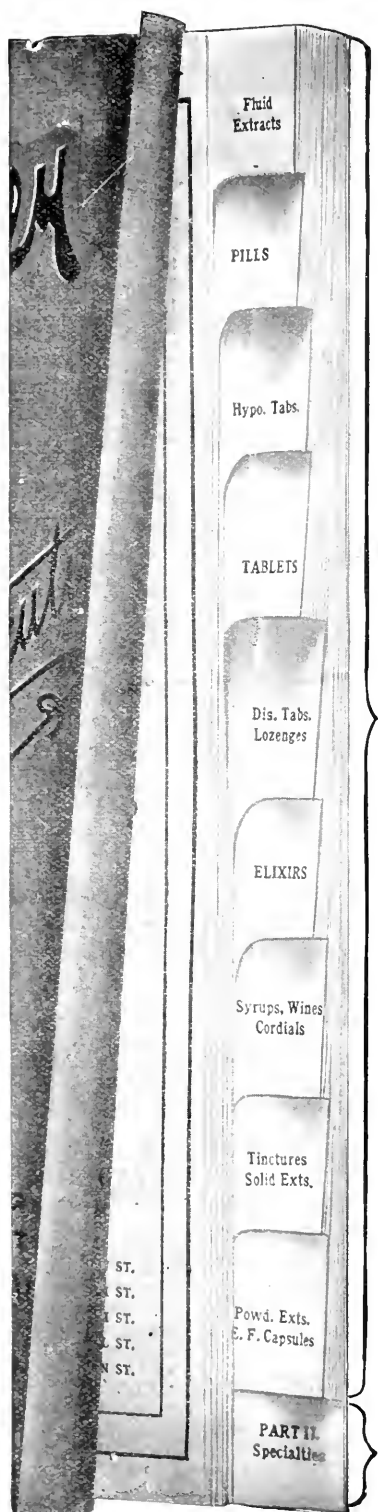
**YOUR JOBBER CARRIES THE
COMPLETE LILLY LINE :: ::**

ELI LILLY & CO.

INDIANAPOLIS
NEW YORK

CHICAGO
ST. LOUIS

KANSAS CITY
NEW ORLEANS



NEW FOURTH EDITION—REVISED AND REWRITTEN

A Text-book of Chemistry

Intended for the Use of Pharmaceutical and Medical Students

By SAMUEL P. SADTLER, Ph.D., LL.D.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry in the Philadelphia College of Pharmacy, and Chemical Editor of United States Dispensatory.

AND

VIRGIL COBLENTZ, Ph.D., F.C.S.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry and Physics in the Department of Pharmacy of Columbia University.

Octavo. 749 pages. 141 illustrations. Cloth, \$3.50. Sheep, \$4.00. Fourth Edition

The purpose of this work has been to offer a text-book on Chemistry which would combine scientific accuracy and completeness with special reference to the needs of the pharmaceutical and medical students, treating all compounds mentioned in the United States Pharmacopoeia. The authors have had many years' experience as teachers in professional schools where Chemistry is considered one of the foundation-stones upon which to build a technical education. This experience has convinced the authors that the subject must be taught in a way which, while thoroughly scientific, is yet distinctly adapted to the ultimate uses of the students.

TABLET MANUFACTURE

ITS HISTORY, PHARMACY AND PRACTICE

By JOSEPH R. WOOD, M.A., Ph.G.

12mo. 23 illustrations. \$2.00 net. Waterproof Cloth.

This volume has been written from knowledge gained by the author through many years of practical experience, to meet the needs of pharmacists who manufacture tablets either in large or small quantities. While an attempt has been made to treat the subject broadly, its nature is such as to demand the consideration of details.

Special attention has been given to causes and remedies of difficulties encountered in manufacture, such as capping, picking and sticking. Also, to the method of treatment of individual substances.

J. B. LIPPINCOTT COMPANY

Publishers

Philadelphia

Looking Ahead is a Habit

Which, once acquired, leads to a closer analysis of business conditions and the appropriation of every new idea or suggestion promising better control of one's business—greater scope for personal enterprise, and increased profits as a legitimate reward of energy, capital and experience.

The Merrell Selling Plan

Stands for *cooperation* and cooperation means *more sales* through closer affiliation with the medical profession, prescriber, and dispenser alike, that they may have convenient for use the best qualities and at competing prices.

THE RETAIL DRUGGIST should establish such relations with physicians that they may test his prices and his qualities and be convinced of his ability to serve them to advantage.

The Merrell Company

Are the original exponents of this cooperative idea; it appeals to *all* druggists, large and small alike, to the city dispenser and the retail druggist, and in localities where office dispensing, as well as prescription work, prevails.

The Merrell Plan Provides for all

The test of a business, by which, in the long run, it rises or falls, is *its ability to perform service*. *Cooperation* with the MERRELL PLAN, which guards your interests at every step, calls for *specification* and its *prompt recognition* by the jobbing distributor.

You cannot throw away ten per cent (10%) on your Pharmaceutical Purchases and *thrive*.

Write to the Merrell Company

If your orders are not filled. Substitution is not cooperation, and the better houses, *who stand for service* to their customers, do not sanction the practice.

The Wm. S. Merrell Chemical Company

CINCINNATI

General Agent's in New York City
CHARLES N. CRITTENTON & COMPANY

General Agents in Chicago
MORRISON-PLUMMER & COMPANY

AND WHOLESALE DRUGGISTS IN ALL LEADING TRADE CENTERS

The Best Drug Store Insurance

The Colorado Insurance Commissioner lately said:

"Insurance to the average citizen is rather an uninteresting and prosaic subject."

"until a loss arises"

This we know from experience to be the exact truth. It explains why so many druggists have insufficient and sometimes unreliable insurance.

If you have insurance, *why not have enough?*

If you have insurance, *why not have the very best?*

Enough insurance means up to at least 80 per cent. of your property value. The best insurance as its very first essential, requires state supervision and ample capital.

Considering the fact that we limit our insurance to the widely scattered property of retail druggists, our Capital and Surplus of nearly \$300,000.00 makes us undoubtedly the strongest Company in this entire country with which druggists can place their insurance.

We are the Strongest

We write insurance at the very lowest premium rates consistent with safety.

Secure the Best Insurance

WRITE TO

The American Druggists Fire Ins. Co.

1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

Licensed and Resident Agents for Thirty-one States

The Journal of the American Pharmaceutical Association

Volume I

NOVEMBER, 1912

No. 11

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

THE NEED OF AN ASSOCIATION HOME.

AS long as the A. Ph. A. continues to represent pharmaceutical progress all of its needs will probably never be satisfied; but one of these, which is becoming more emphatic each year, and one which it should be possible to meet, is that of a permanent and properly equipped association home.

Hitherto the home of the association has been wherever the General Secretary has chanced to reside, and this lack of settled habitation has interfered not only with association work generally, but especially with the making of the historical and other collections which such an association might reasonably be expected to possess.

Its archives and historical collection, such as they are, are stored at the University of Wisconsin, at Madison, while its official records and stock of proceedings are stored partly at the office of the General Secretary and partly with the publishing house which printed them. In the sixty-one years of its existence the Association has, no doubt, received a large number of books and scientific and professional publications of various kinds, but these have been disposed of almost as fast as received, and there is now only an aching void to represent what should be a library of respectable dimensions; and lamentable to say, the society does not even possess a complete set of its own publications.

Among these losses we must count not only the collections which have been dissipated, but the greater and more valuable collections of books and historical documents which the A. Ph. A. might have accumulated if it had possessed a place for their permanent preservation.

Not only should the association possess a permanent place for its archives, his-

torical collection and library, but it should have at its command suitable laboratories where the formulas proposed for inclusion in the National Formulary could be tested out, and where many of the mooted questions of U. S. P. importance could be considered. Outside of the field of official preparations, there are also a number of investigations of importance to the dispensing pharmacist which could receive attention. Formulas in pharmaceutical publications are as "thick as hops," and are no doubt selected from the best available sources, but often, very often, they are either unworkable, or yield unsatisfactory products. Evidently some of them, like the German's camel, have been evolved wholly from the inner consciousness of their authors.

With the aid of a properly equipped experimental laboratory the proposed A. Ph. A. recipe book might be expected to contain only tested and workable formulas.

A building sufficient for the purposes outlined should, of course, be located in some city where there are facilities for the publication of the Journal and National Formulary. It should be a fireproof structure, and should be architecturally in keeping with the purposes for which it is intended.

At a rough guess, the cost of the completed structure should not exceed \$50,000.00, though it should be erected in such a way as to permit of additions and expansions as needed.

With its rapidly growing membership and revenues, the Association could without much effort provide for the maintenance of such a plant, but the first cost of its erection and equipment would have to be met otherwise; and since the A. Ph. A. has given its services freely to the whole of American pharmacy, why should not the whole of American pharmacy contribute to a plant which would enable the Association to greatly increase its usefulness to the cause which it represents?

In the erection of such a structure pharmacy would not only be making provision for the satisfaction of its present and future needs, but it would also be providing a memorial for the many noble spirits, as Procter, Parrish, Maisch, Ebert, and a host of others who have enriched and dignified American pharmacy.

The *Journal* will be glad to publish the thoughts of the members upon this subject.

J. H. BEAL.



HOW SOME DOCTORS VIEW U. S. P. AND N. F. PROPAGANDA.

IT might perhaps be of advantage to pharmacists to become acquainted with some of the objections raised by doctors to the U. S. P. and N. F. Propaganda, as they have become apparent to one who has busied himself in behalf of these efforts.

Some doctors object to the therapeutic information that is gratuitously administered to them by the druggists. What, they say, do druggists know about therapeutics? And, I must confess, that some of the therapeutic ideas advanced by pharmacists in this connection, though taken from text-books, are antiquated and not in keeping with advanced conceptions. Would it not be better if pharmacists confined themselves in their literature intended for doctors to the discussion of

things that druggists really know better than doctors, e. g., pleasant administration?

Quite a number of doctors feel that the druggist is in this movement merely for the sake of dollars and cents, that the same commercialism lies behind it that leads him to "counter-prescribing," to indiscriminate refilling of prescriptions, and to substitution. To antagonize this objection, propaganda for *ethical pharmacy* should accompany the U. S. P. and N. F. propaganda. By the way, what is ethical pharmacy? Does anyone know of a code of pharmaceutical ethics? And if not, is it not time that such a code be devised?

Some doctors believe that the "get-together" movement should mean a declaration of willingness on the part of the druggist to advance the interests of doctors, just as he desires the doctors to advance the interests of the druggists. Should not the larger aims of pharmacists and physicians be the same? Should they not be united in battling for the most efficient treatment of the sick, and the greatest possible protection of the health of the well? I am sure pharmacists would find the physicians willing and powerful allies in any effort to raise the educational requirements of pharmacists, should the pharmacists desire advance in that direction. Why should not pharmacists take active interest in the efforts of the medical profession toward higher medical education and the diminution of the baneful activity of the quack? The better educated the doctor, the less will he be in need of U. S. P. and N. F. propaganda.

Prevention of disease is the highest and most altruistic aim of the medical profession. Every case of disease prevented means a loss of money to the doctor as well as to the druggist, and yet doctors have ever united their efforts toward the prevention of disease. Why should not druggists join them in these efforts? Would it not be more nearly in keeping with the "get-together" spirit if druggists aided instead of combatting the establishment of a national department of health; if they united with the medical instead of the anti-medical forces in this fight?

BERNARD FANTUS, M. D.

Book Reviews

PHARMACEUTICAL BACTERIOLOGY, WITH SPECIAL REFERENCE TO DISINFECTION AND STERILIZATION. By Albert Schneider, M. D., Ph. D., (Columbia University), Professor of Pharmacognosy, Histology and Bacteriology California College of Pharmacy; Pharmacognocist U. S. Department of Agriculture; 238 pages, with 86 illustrations. Cloth. P. Blakiston's Son & Co., Philadelphia, Pa. 1912.

This text book on Bacteriology especially designed for the use of pharmacists and students of pharmacy appears at a most opportune time. Short courses in bacteriology are being introduced in nearly all schools of pharmacy, and a knowledge of certain parts of the science is now expected of pharmacists. Essential is a knowledge of the preparation and sterilization of culture media, reagents, stains and special solutions for physicians, of the sterilization of certain pharmaceutical preparations and of the standardization of disinfectants. Likewise the fundamentals of the morphology and physiology of bacteria and related organisms and their relation to the causation and cure of disease, to medicines and food, to the arts and industries.

Schneider's Pharmaceutical Bacteriology is most excellently designed to serve its purpose. The range of chapters is as follows: General Introduction; Historical Morphology and Physiology of Bacteria; Range and Distribution of Bacteria; Bacteriological Technic; Bacteria in the Industries; Immunity, Bacterial Activities and Bacterial Products; The Manufacture and Use of Sera and vaccines; Yeasts and Moulds; Protozoa in Disease; Disinfectants and Disinfection; Food Preservation; Insecticides; Sterilization and Disinfection in the Pharmacy; Communicable Diseases with Suggestions of Preventive Medicine; A Bacteriological and Microscopical Laboratory for the Pharmacist.

The discussion of bacteriological technic is especially good; the directions for the preparation of media and stains being not only full, simple and accurate, but the very latest and most improved methods are given. The author follows a rather original plan in presenting this most important subject. The chapter on The Manufacture and Use of Sera and Vaccines is very well written, and is of especial value to pharmacists many of whom are so slightly informed on this important part of their business.

The discussion of disinfectants and of the principles of disinfection and sterilization and of the practical application of these principles in the pharmacy would alone make the book well worth while to every pharmacist.

The last chapter, on the Bacteriological and Microscopical Laboratory for the Pharmacist, brings fairly before every pharmacist the question which has already entered the minds of many thinking men of our profession. Should there not be a public distinction made between professionally trained Pharmacists and medicine-selling Druggists?

The work does not intrude into medical bacteriology, but does include those

special features a pharmacist should know in regard to this most important modern science.

Criticism of a point or feature here and there may be offered as is always the case of any work done by mere man. For instance, the author says in his introduction that "Bacteriology must not be made discouragingly difficult to the pharmacist," and yet in his very first chapter on the history of the science he mentions the names of no less than 92 persons with a date and a reference to their accomplishments. If the average pharmaceutical student of bacteriology learns the names of five of the great discoverers in the realms of this science he has gone the limit.

While nearly all of the book is written in a simple yet dignified style the short chapter on the Range and Distribution of Microbes appears to be too simple, almost childish, with much repetition, and includes several statements very subject to doubt.

It would seem also as though the arrangement of chapters could have been improved.

However, on the whole the book is fine and will undoubtedly find a wide circulation in this country.

E. N. GATHERCOAL.

METHODS OF ORGANIC ANALYSIS. By Henry C. Sherman, Ph. D. Professor of Food Chemistry in Columbia University. Second Edition, rewritten and enlarged. Illustrated. Cloth, 8vo. \$2.40 net. The Macmillan company, New York.

Organic Analysis may be treated as a mass of subjects arbitrarily arranged, or, following the new system of organic chemistry, it may be logically developed into system similar to the ones we have followed in our inorganic chemistry. The latter, needless to say, is the satisfactory teaching method, and Professor Sherman has followed it well in this new edition, just off the press.

Beginning with the alcohols, the book takes up in succession their oxidation products and allied substances, the aldehydes and acids, and the carbohydrates, the fatty acids and their derivatives, fuels, proteins, including grains and milk, and preservative agents. The treatment in each case is such that the book may be used not only as a manual for students, but as a practical working handbook for the commercial laboratory.

In extending the scope of the work, the new matter includes "a chapter on solid and liquid fuels, and sections on industrial alcohol, drying oils, crude petroleum, the new international methods of glycerin analysis, and quantitative methods for the testing of enzymes." The results of the latest researches have been embodied in these chapters, much of the work having been done in the Havemeyer Laboratories by Professor Sherman and his students.

The bibliography following each chapter is admirably arranged in two divisions: first, a list of available works of reference; second a chronological list of articles bearing on the subjects treated in each chapter. The bibliography contrasts vividly with a manual which the writer had occasion to examine some time since, in which frequent mention was made of well known analytical

methods, and others not so well known, without a single reference being given which would make it possible to check up results, or even to secure details of the method.

In the writer's opinion, the chapter on Ultimate Organic Analysis should have been left at the beginning of the book, as in the first edition. as a few exercises in ultimate analysis give the student facility in the quantitative handling of organic substances.

We congratulate Professor Sherman on his revision of his most excellent textbook, and hope that it will find as extensive a use in class room and laboratory as it deserves.

GEO. D. BEAL.

THE REVISED PHARMACEUTICAL SYLLABUS, as outlined by the Faculty of the Philadelphia College of Pharmacy. Mimeograph copy; 80 pages, 8 x 15 inches.

The revisions that are taking place in matters pharmaceutical are hopeful signs of the time. The interest manifested in the revision of the Pharmaceutical Syllabus portends well for the future and is important as pointing to the professional pathway that pharmacy in America is destined to travel.

The first edition of the Pharmaceutical Syllabus was intended to cover the period from 1910 to 1915, but an earlier revision was deemed necessary and this is now in process and in charge of a National Committee of 21 composed of 7 members appointed by the Conference of Pharmaceutical Faculties, 7 appointed by the National Association of Boards of Pharmacy and 7 by the American Pharmaceutical Association.

The faculty of the Philadelphia College of Pharmacy have outlined the instructions to pharmacy students as given in this pioneer of the American schools of pharmacy and present to the National Committee on Syllabus this mimeographed book of 80 pages each 8x15 inches as a basis for the proposed revision. In doing so a signal service has been rendered and this valuable "constructive criticism" merits the careful consideration of the National Committee and should have an important influence in shaping the revision.

As a preface, Mr. George M. Beringer, in his dual capacity as Chairman of the Board of Trustees of that college and as a member of the National Committee on Syllabus, contributes a letter of transmission. In this a number of general topics are presented and several important issues are raised. The use of the word "pharmacology" as synonymous with "pharmacy" as is done throughout the first edition of the Syllabus is questioned and it is argued that modern correct usage differentiates these as having separate and distinctly different applications and that pharmacology is more correctly and specially used as the synonym of pharmacodynamics.

The two years' course as outlined in the first edition of the Syllabus is characterized as a fundamental error and a plea is presented in favor of a re-arrangement of the instruction outlined into a three years' course. It is argued that the instruction necessary for pharmacy students is more than can be properly imparted by the teacher or mastered by the student in the time allotted and that the welfare and success of the student as well as the professional advancement of

pharmacy demand an extension of the course to three years. This plea is a timely presentation of a condition that confronts the schools and faculties who are honestly endeavoring to educate pharmacists. With the conditions recognized and the disease diagnosed, pleas and arguments should not be necessary to convince an intelligent committee of the necessity of correction and the application of the proper treatment.

The writer claims "that undue consideration is given in the Syllabus to the subjects of therapeutics and physiology, and that these have been treated at undue length, and from the view point of a physician rather than from the needs of a pharmacist." "We should restrict instruction in physiology to concise descriptions of functions and actions and omit the details of anatomical structure and limit therapeutics to the definitions of terms describing the actions of drugs and such explanations of these actions as are essential to the performance of the duties of the pharmacist." The time thus saved he believes could with benefit be applied to pharmacognosy.

He recommends the introduction of instruction in the physiological assaying of Drugs, and also, that an elementary course in bacteriology be outlined giving the essentials of that important branch of science.

Each member of the faculty has contributed to the body of the book a revision of that part of the Syllabus relating to the subjects that he teaches, with criticisms and suggestions for additions, deletions and changes.

Dr. C. B. Lowe in his consideration of the course in physiology suggests a number of changes in the sequence of treatment of the topics. He recommends the introduction of instruction covering the following subjects: animal heat, sight, speech, hearing, taste and touch.

He suggests that the medical terms used, especially those used to describe the reaction of drugs upon tissues should be defined, and in each case examples of drugs possessing such action be given as illustrations.

Professor Henry Kraemer presents a recast of the part of the Syllabus relating to botany and pharmacognosy. He separates as histological botany much that is included in the first edition of the Syllabus as pharmacognosy, and claims that "pharmacognosy is today recognized as a distinct science" with definite limits and with botany as a necessary preliminary study. For this reason he arranges a scheme with all botanical instruction included in the first year.

He criticizes the division of pharmacognosy into histological pharmacognosy and commercial pharmacognosy. In his opinion "it is impractical during one part of the course to consider the anatomy of drugs and then during another semester to consider commercial varieties, adulterations, etc., of the same drug." "It is self-evident that the structure, the adulteration, and also the study of the crude drug and the powdered drug should all be taught at the time the pharmacognosy of that drug is being considered." He has outlined the subjects of botany, pharmacognosy and microscopy to cover a complete course of three years and in the third year he includes instruction in the microscopic examination of urine and such clinical work as the pharmacist is commonly called upon to perform.

Professor Freeman P. Stroup outlines a short course in physics, such as commonly is given to pharmacy students where the instruction in this branch is re-

stricted to simply what is deemed necessary as a foundation for pharmaceutical chemistry. That the first edition of the Syllabus should devote so much space, for example, to instruction in physiology and therapeutics, as instruction proper to pharmacy students, and then treat within such narrow limits a science on which many of the daily operations of the pharmacist is based, appears inconsistent and open to criticism.

Professor Samuel P. Sadtler in comparing the instruction in chemistry as given in the Syllabus and as outlined in his proposed revision criticizes several of the statements of the Syllabus. The requirement for laboratory exercises in elementary physics is practical only under conditions that do not prevail in colleges of pharmacy, namely, especially equipped laboratories, small groups of students and a number of qualified instructors.

He specifically criticizes the arrangement in the Syllabus of the course in General Inorganic Chemistry with Mendelejeff's Periodic Law as the basis of the arrangement. He considers this an unsatisfactory presentation of the subject to beginners. He illustrates his criticism thus:

"The halogen group is stated to contain chlorine, fluorine, bromine, iodine, and manganese," simply because manganese in the periodic system happens to come in the seventh "natural group" with the true halogens. Boron and aluminum are considered one after the other as in the third group, although fundamentally widely different in all physical and chemical characters. The sixth group, classified as hexads without any qualification, starts with oxygen, followed by chromium and then by sulphur, selenium and tellurium. Is this a desirable way to get the young chemical or pharmaceutical student to understand the important and essential facts and relationships of these elements? Oxygen is not hexad in any of its organic compounds that we know of, and not certainly in any compound organic or inorganic. The eighth group called octads, begins with the iron family, which is made to include iron, nickel, cobalt, and copper, next the silver family, which includes silver, ruthenium, palladium, and rhodium, and then the platinum family, which includes platinum, osmium, and iridium. All these are called octads. This is in the first place a distortion of the periodic system, as taught in standard and authoritative text-books, and in the next place it substitutes a still little-understood theory for proper experimentally supported analogies with regard to these elements."

Professor Frank X. Morek outlines a course on analytical chemistry. As notable innovations, might be mentioned, "The Introductory on Analytical Chemistry Principles" and the "Course on Chemical Mathematics."

Professor Joseph P. Remington suggests a number of additions to that part of the Syllabus relating to Pharmacy, such as an article on pharmacopoeial nomenclature including orthography and definitions of pharmacopoeial terms, instruction for the correct reading of graduated measures; use of specific gravity tables; tests for complete extraction, etc.

The course in Operative Pharmacy as outlined by Professors Remington and E. F. Cook is replete with rules and regulations covering books, apparatus, cleaning, dispensing, etc. It considers each class of preparations with definitions, methods and with actual preparation of U. S. P. and N. F. formulae. It covers, as well, a number of non-official formulas including many toilet preparations.

The desirability and practical value of such instruction to the future druggist is appreciated, even though such may not be considered as properly coming within the limits of examination by Boards of Pharmacy.

A section is devoted to sterilization and the methods of accomplishing the same; a timely introduction. Compounding of prescriptions is outlined at length with rules and methods in considerable detail.

The course in commercial pharmacy has likewise been outlined by Professors Remington and Cook and is one of the features of the proposed Revised Syllabus and presents many subjects relating to the business side of the pharmacist, some of which druggists too frequently find have been sadly neglected in their early training. The student who intends to follow the drug business for a livelihood needs just such practical training for his future career. This feature of the book might well replace the isolated pages on this subject in the present book.

Space does not permit an extended review of this contribution to the revision of the Pharmaceutical Syllabus, but the above references to a number of the salient features will serve to show its value to the Committee of Revision and the consideration it merits. Whether or not we agree with the conclusions of the several authors, the suggestions obtained by a careful perusal will well repay the teacher and the pharmaceutical examiner.

J. W. ENGLAND.

INHALED DUST AND THE RESPIRATORY TRACT.

Naturally enough the respiratory tract is taken to be the chief path of invasion for the dust we breathe in. The pathology of the inhalation diseases—anthracosis, siderosis, chalicosis—bears testimony to the burdens which may thus be put on the lungs. In considering palliative measures and preventive devices to be applied in industrial work it has become necessary to learn something more exact regarding the travels of inhaled dust in the organism as well as the actual quantities which represent dangerous or insanitary limits. Investigations which the Würzburg hygienist, Professor K. B. Lehmann, has conducted along these lines with his pupils have furnished some unexpected facts. They have demonstrated that the great bulk of the inspired dust finds its way into the stomach, not into the lungs, as has been confidently assumed. Obviously the dust is regularly caught by the nasal and pharyngeal mucosa and the dust-laden secretion then swallowed. All of the inhaled dust was retained by the oral or nasal passage, yet less than a quarter of it entered the lungs at the best.

In case of insoluble particles the gastro-intestinal path may furnish a most satisfactory channel for the subsequent elimination of the dust from the body; but soluble dust finds a peculiarly favorable chance for absorption along the same route, and the opportunity for chronic intoxications is thus easily established. In any event, the lungs escape the major part of the initial irritation.—*Journal A. M. A.*

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE SECTION ON SCIENTIFIC PAPERS.*

FIRST SESSION—Tuesday Afternoon, August 20, 1912.

The first session of the Section on Scientific Papers was, in the absence of both Chairman Richtmann and Secretary LaWall, called to order by Associate F. R. Eldred, of Indianapolis, at 3:30 P. M., in the ball-room of the hotel, on the eighth floor. Freeman P. Stroup, of Philadelphia, acted as Secretary.

Mr. Eldred stated that the Chairman had given notice a few days ago that he would not be present, and had sent no address. Also, there would be no report from the Secretary, who was likewise absent. He asked the members to excuse the irregularities that might occur in the program. A number of papers had not been received until this afternoon.

Continuing, the Acting Chairman said he wished to repeat what he had said last year, that the system of arranging the program for this Section was wrong. He thought the present circumstances justified the position he had taken. It was the custom to accept papers up to the last minute before the Section was called to order, and there could be no definitely outlined program on that account. No one knew before coming to the meeting what papers or subjects were to come before the Section. Therefore, it seemed very desirable to include in the By-Laws some provision which would necessitate the titles of papers, at least, being in the hands of the Chairman or Secretary of the Section at some definite date before the meeting; and further, that the papers complete should be in the hands of the Chairman or Secretary before the meeting of the Association.

After this explanation, the Chair stated that the first order of business would be the reports of standing committees, and the first of these was the Committee on Drug Reform. This report was presented by Chairman L. E. Sayre. (See September Journal, p. 1029.)

Mr. Sayre said that Mr. Schneider had sent to him recently some suggestions, which, with the permission of the Section, would be added to the report.

The Chair called for action, and H. H. Rusby, duly seconded, moved to receive the report, to take the usual course.

Prof. Rusby said it had occurred to him there was one way by which the evil of uninspected drug stocks could be reached. Nearly all the drug statutes gave the administrators of the law the right to enter places where medicines were kept for sale and take samples; and if it appeared that these medicines were there for the purpose of being sold, prosecution could be had just as if they had actually been sold and seized in the process. One difficulty was that the supply houses

* Papers and reports not appearing here will be printed separately.

did not keep these drugs under their proper names. Tincture of Belladonna deficient in strength was not sold as such, but under a number, and the physician ordered by that number. But there was in the Federal statute a very important clause which was overlooked by a great many people, and that was, that they were liable to punishment for having in their possession anything which was an imitation of a product of the Pharmacopoeia. If it was clear that it was an imitation, and was intended to be, that person could be prosecuted and punished. That was a very important provision, and he thought it would be well for the States to follow that law in enacting similar legislation.

R. H. Needham, of Texas, asked Dr. Rusby what he would do concerning the strength of certain specific tinctures, like belladonna and veratrum viride.

Dr. Rusby responded that it was supposed that anything of this sort was an entity in itself. Certain people wanted these things. But if the tincture of veratrum viride, for instance, was only half strength,—say 56 per cent. or 33 per cent.,—it would be clear that it was a fraudulent imitation, and that person could be punished.

Mr. Gordon stated that there was a homoeopathic pharmacopoeia which was recognized by homoeopathic practitioners as official just as was the United States Pharmacopoeia by allopathic physicians. The homoeopathic standards of strength were based on definite standards of their own just as are the U. S. P. standards. For example, the so-called "mother tincture" of a drug was required to be made from the green, or fresh, drug, but to secure uniformity of strength it was directed that the fresh drug used be first dried to a constant weight and the amount of moisture contained in it thereby estimated, then the tincture should be made from such a proportion of the fresh drug as would correspond with the required percentage of dried drug in the finished preparation. Belladonna was mentioned as an example; some belladonna leaves containing more moisture than others, so that a given weight of one sample of green leaves would contain more water than another sample and hence the tincture made from them by weight would not be of the standard strength. The same standard was set for other preparations derived from vegetable drugs, that is, while the alkaloidal strength was not required to be determined the proportion of plant moisture was, this being very necessary in the case of fresh, succulent plant drugs. The question of the value of such standards was not discussed by Mr. Gordon, the purpose of his remarks, he said, being solely to bring out the point in discussion, that the homoeopathic physician had authoritative standards for his preparations.

In reply to a question from Mr. Scoville as to the legal standing of the homoeopathic pharmacopoeia Mr. Gordon replied that it was his impression that it was the legal standard for homoeopathic preparations in the State of Pennsylvania, just as was the U. S. P. for allopathic preparations, but could not state this positively. He said that the pharmacopoeia to which he referred was issued and sanctioned by the American Institute of Homoeopathy, a body which had a relation to this standard very much like the American Pharmaceutical Association has to the National Formulary. He also mentioned that there is another homoeopathic pharmacopoeia issued by one of the oldest manufacturers of homoeopathic preparations, in fact the two books might be compared to our own two "dispensatories," both being guides to the physician and pharmacist.

Prof. Sayre said he did not think it would be wise to discuss this paper at great length, as the whole afternoon could be occupied with it. As he remembered, the Federal law contained a paragraph to the effect that any drug or medicine not official in the United States Pharmacopœia or in the National Formulary should conform to its own standard; meaning by that that if the manufacturer put out, for example, an elixir of belladonna, that must have at least belladonna in it; and there should be, and it was possible to have, a standard fixed for a great many of these unofficial preparations. Whether in the National Formulary or not, that was the spirit of the administration of the State Food and Drugs Law in the State of Kansas. They claimed that even though the preparation was not official in the Pharmacopœia, or in the National Formulary, the preparation should have some sort of standard of its own—even patent medicines. They considered that if they found any patent medicines showing a very evident deterioration which could be determined, then it did not come up to its own accepted standard. If any tincture not mentioned in the U. S. Pharmacopœia should be put on the market, that tincture should have in it the things it claimed. Mr. Sayre said he had been guarded in presenting any recommendation. He thought the Chairman of the Section should put to a vote whether this report on Drug Reform met the approval of this Association. If not, then the influence of this committee was practically null and void.

Prof. Schneider requested leave to present a supplemental report. The Chairman of the committee, himself and other members, were satisfied that the subject was an enormous one, and the ramifications almost infinite; that the different sources and different conditions that were responsible for the situation were so numerous that it would be simply impossible to consider them at one meeting, or any number of meetings. The suggestions he had to make here might be looked upon as a summary of the situation that his committee had presented up to the present time. He then proceeded to read the following:

SUGGESTIONS ON IMPROVING THE DRUG SITUATION IN THE UNITED STATES.

ALBERT SCHNEIDER.

The following brief statement is submitted as a supplement to the report by Prof. L. E. Sayre, Chairman of the Committee on Drug Reform.

As already stated by Professor Sayre, it would appear as though the committee has accomplished little or nothing in the way of actual results, as far as the drug situation in the United States is concerned. We have, however, collected very valuable information and data regarding conditions as they exist in the drug business—national, state, and local—wholesale and retail.

The examination of drugs imparts a considerable actual experience in the growing of drug plants, and has convinced the writer that due allowance must be made by officials empowered to administer the national and state drug laws for reasonable variation in the quality and appearance of crude vegetable drugs. It has also become evident that the purity rubric of the U. S. P. is far from satisfactory and that the methods of drug assay and testing must be modified and improved. It is furthermore evident, as has been emphasized in previous reports of this committee, that drug work (in national as well as in state laboratories) is neglected or side-tracked for the food work. This is certainly the case on the Pacific Coast. Most of the men in charge of Federal and State pure food and drugs laboratories know little or nothing about drugs, which explains why much of the drug work outlined and directed by them has no special value as far as the correction of the existing evils are concerned. There is yet another factor which should receive our serious consideration. There are

certain conditions governing the quality and purity of drugs which evidently cannot be modified and corrected by either Federal or State legislation. These can be suitably met by the proper city, town, county and other local regulations, rules and ordinances, assisted by local educational propaganda, but such efforts should be uniform and widely operative within the United States.

The above statements are based upon observation and study extending over a period of five years and more. Some of the details and results of these observations have been published in the *Proc. A. Ph. A.*, and in the pharmaceutical journals.

The following recommendations are based upon the foregoing and submitted for consideration and action:

(1) That the A. Ph. A. urge immediate cooperation between the Revision Committee of the U. S. P., the Division of Pharmacology of the U. S. Public Health and Marine Hospital Service, the Bureau of Chemistry of the U. S. Department of Agriculture, and the Scientific Section of the A. Ph. A. for the purpose of bringing about the most satisfactory additions and changes in the methods of drug assay and drug examination to be embodied in the forthcoming edition of the U. S. P.

While this is being done in a measure, it is, nevertheless, believed that a prompt and more efficient cooperation of this kind will make the U. S. P. a more valuable standard of quality and purity of drugs and less liable to miscomprehension by judge and attorney.

(2) That the A. Ph. A. urge upon the Bureau of Chemistry of the U. S. Department of Agriculture a more equitable administration of the food and drugs division of the national pure food and drugs law, and that more attention be given to drug work in some of the Federal laboratories.

(3) That the attention of the Bureau of Chemistry be called to the importance of efficient import and interstate inspection and examination of drugs, particularly in the western and southern sections of the United States.

(4) That the A. Ph. A. urge a better cooperation between Federal and State pure food and drugs laboratories.

(5) That a more uniform and efficient administration of the pure food and drugs acts of the several States be urged.

(6) That the A. Ph. A. formulate a plan for local propaganda in bringing about a betterment in the drug situation.

(7) That the A. Ph. A. appoint a committee which shall draw up a detailed plan of action according to the preceding suggestions.

In endeavoring to carry out such a plan some disappointment in the attainment of results must be expected, but the educational value of such activities is considerable.

The Chair then put the vote upon the motion to receive the report, together with the supplemental report, to take the usual course, and it prevailed.

John M. Francis said all admired the initiative which had been taken by the great State of Kansas, from which so many good things came. There was perhaps no question that confronted the Association that was a greater source of friction, dissatisfaction and discussion, than the one presented today. The report of this committee might practically be divided into two sections—first, those things of general consideration, treated by Mr. Schneider; second, and perhaps more important, that part treated of by Mr. Sayre, referring to the proper inspection of drug stocks in the hands of dispensing physicians. It seemed to him that the Section had three courses open to it: First, it might accept the report of the committee, and in the usual way have it embodied in the Proceedings. Second, it might endorse this report as a Section, and refer it to the Council, with the recommendation that it ask the American Pharmaceutical Association to endorse the report and the sentiments therein expressed. Third, it might go a step further, and ask the American Pharmaceutical Association, through the Coun-

cil, to place itself on record, not only as approving this proposed reform, but also to present it to all the various State Pharmaceutical Associations throughout the Union, asking them to take it up and continue this good work. There were three clear-cut courses to be pursued, two of them calculated to accomplish something — though calculated, perhaps, to create dissension between the two professions.

Mr. Needham suggested that Dr. Francis embody in a motion one of the several suggestions he had made.

Dr. Francis said that if it would help to crystallize the sentiment of the Section he would offer a motion to the effect that the Scientific Section of the American Pharmaceutical Association recommend that the Council of the Association present this issue to the Association as a whole, for its commendation.

Mr. Needham seconded this motion.

Dr. Francis, continuing, said his idea was, that this Section, through the Council, should present to the Association the sentiments expressed in this report made by Mr. Sayre, commending the recommendation that steps should be taken throughout the various States of the Union, whereby the stock of medicines in the hands of physicians should be subjected to the same legal supervision as those in the hands of druggists.

Prof. Vanderkleed seconded this motion, and said that in his opinion no more important action could be taken by the Association than this—not only with regard to the physician's stock, but looking to uniformity in the administration of food and drug inspection in the various States.

The Chair thereupon put the vote on the motion of Mr. Francis, as seconded and amended by Mr. Vanderkleed, and it was carried.

The Chair stated that the next report in order was that of the Committee on Drug Market, and that as Chairman E. L. Patch was not present, it would be read by the Secretary, which was done.

The Secretary also read a supplemental report, sent in by another investigator, but not received in time to appear in the regular report.

The reports were discussed by Messrs. Rusby, Puckner, Eldred, Gordon, Francis, Schneider, Vanderkleed and Sayre.

Mr. Sayre moved that the report be received and edited as suggested by Mr. Rusby. (Discussion will appear with the report.) Mr. Francis seconded this motion, and so did Mr. Scoville.

The Chair put the vote on the motion to receive the report of the Committee on Drug Market, after proper amendment by Mr. Rusby along the lines suggested in the discussion, and the motion prevailed.

The Chair said the next order of business was the report of the Committee on Physiological Testing, and Chairman Houghton not being present, he would ask the Secretary to read it.

Mr. Asher suggested that it had been the custom in the past to read these reports by title, and he thought the Section ought to get down to the reading of papers.

The Chair said that this report was of a little different character than the others, was brief, and was a scientific matter. It was a committee more properly entitled to report to the Section than any other committee, and he thought the report might be read in full.

The Chair called on the Secretary to proceed with the reading of this report, which he did.

The Secretary explained that there were two papers accompanying the report of the committee, one on the assay of cannabis sativa, the other one the blood pressure raising principle of the suprarenal glands. (This report appears elsewhere in this issue.)

Prof. Vanderkleed moved to receive and approve the report of the committee, and that the recommendation that the committee be empowered to cooperate with the Public Health and Marine Hospital Service and the Hygienic Laboratory be concurred in, and that it be declared the sense of this Section that this committee be continued. This motion was seconded by Mr. Asher and carried.

The Chair stated that this completed the reports which were to come before the Section, and the next order of business was the appointment by the Chair of a Nominating Committee to report the names of two candidates for each of the following offices: Chairman, First Vice-Chairman, Second Vice-Chairman and Secretary. This report was to be made at this session, and the candidates for the various offices were to be balloted upon at the last session. As such committee he named Mr. Asher, of New Orleans; Mr. Schneider, of San Francisco, and Mr. Charles Caspari, Jr., of Baltimore.

The Chair stated that the Section would now proceed to the reading of papers, and the first on the program were two by Messrs. Chas. E. Vanderkleed and Paul S. Pittinger.

Before taking up the reading of his paper, Prof. Vanderkleed explained that it had been written by way of carrying out the promise made at the Boston meeting that a series of experiments covering a year's time should be made concerning the susceptibility of the guinea-pig to the heart-tonic group. He did not come before the Section as a special pleader for any particular method, but simply to give the results of these experiments. In the absence of a blackboard, he would simply have to give the summaries, and when the papers were published, the members would have a chance to refer to the tables and judge for themselves as to the conclusions that had been drawn from the results. He then presented in abstract the two papers, "Variation in the Susceptibility of the Guinea-Pig to the Heart Tonic Group" and "Variation in the Susceptibility of Frogs to Ouabain."

The papers were discussed by Messrs. Sayre, Hamilton, Vanderkleed and Eldred, and on motion were received and referred for publication.

The Nominating Committee presented the following list of nominees to be voted upon at the next session:

For Chairman — Frank R. Eldred, C. W. Johnson.

For Vice-Chairman — Dr. John M. Francis, Linwood A. Brown.

For Second Vice-Chairman — Wilbur L. Scoville, R. H. Needham.

For Secretary — F. P. Stroup, E. G. Eberle.

The Chair announced that the report of the committee would be acted upon at the last session on Thursday afternoon, and on motion the Section adjourned to meet at 10:00 A. M., Thursday, August 22.

SECOND SESSION — Thursday Morning, August 22, 1912.

Acting Chairman Eldred called the Section to order at 10:30 A. M. in the Ordinary on the top floor of the hotel. B. L. Murray, of New York, acted as Secretary, in the absence of F. P. Stroup, who acted in that capacity at the first session.

William Mittelbach, of Boonville, Missouri, was given permission to present a paper by a young man formerly in his service, but now of New York City, Mr. L. N. Sahm, — who, he said, was too modest to put himself forward. The paper was entitled "A Mercury Vapor Lamp for Bleaching."

Mr. Mittelbach exhibited eight samples of oil, four unbleached and four bleached, to illustrate the effect of this treatment, also some samples of colored paper, showing the bleaching of some of them from the sun's rays after several hours' exposure, and others showing the bleaching of like samples after the exposure to the lamp's rays for the same length of time.

There was no discussion of the paper, and it was referred to take the usual course.

L. E. Sayre presented a paper on "Crude Gelseminine and Its Possible Constituents."

There was no discussion of the paper, and it was ordered to take the usual course.

W. L. Scoville then read a paper entitled "On Drug Standards," which was discussed by Messrs. Chas. Caspari, Jr., F. T. Gordon, C. E. Caspari, H. R. Eldred and W. L. Scoville.

The paper was ordered to take the usual course.

Mr. Scoville next presented a paper on "Tincture of Cantharides and its Assay," which was discussed by F. R. Eldred and Chas. Caspari, Jr., after which the paper was ordered to take the usual course.

The Acting Chairman at this point read by title his paper on "A Convenient Method for the Estimation of Albumin in Urine," which was received and ordered to take the usual course.

H. C. Hamilton presented a paper on "The Pharmacological Assay of Pituitary Preparations,"* and one on the "Physiological Assay of Cannabis Sativa," which were received and referred to the Publication Committee.

A. W. Linton then presented a paper entitled "Reports on Some Commercial Samples of Drugs." This paper was referred to take the usual course.

In the absence of the writers, the following papers were read by title and referred for publication:

"An Outline of Micro Analytical Methods in Pure Food and Drug Laboratories," by Albert Schneider.

"A Note on the Keeping Quality of Volumetric Potassium Hydroxide Solution," by A. H. Clark.

"The Oleoresin of *Pseudotsuga taxifolia*," by O. A. Beath and Edward Kremers.

* See October Journal, p. 1117.

"The Ash Standard," by E. L. Patch.

"Purity of Chemicals and Drugs," by H. Englehardt.

"The Quality of Drugs," by W. A. Pearson.

"The Assay of U. S. P. Chemicals," by F. X. Moerk.

"A Few Drugs and Preparations submitted to the U. S. P. Quantitative Tests," by F. J. Wulling.

"The Production and Valuation of Belladonna in Minneapolis," by Manley H. Haynes and E. L. Newcomb.

"The Adulteration of Cascara Sagrada," by F. A. Miller.

"Tentative Standards for Some Biologically Standardized Drugs," by Chas. C. Haskell and Chas. R. Eckler.

"Ergot and Its Active Principles," by H. H. Dale.

"Guaiacol and Creosol Acetic Acids, and Some of Their Derivatives," by A. R. L. Dohme and H. Englehardt.

"The Electrolytic Determination of Some of the Zinc Salts of the Pharmacopoeia," by Joseph Rosin.

"Estimation of Iron in Reduced Iron," by O. E. Winters.

"Remarks on the Assay of Pepsin and Its Preparations," by L. Henry Bernegau and Leo H. Glickman.

"The Saponification of Fixed Oils Without Heat," by G. N. Watson.

"A Modification of the U. S. P. Assay Process for Opium Preparations," by S. L. Hilton.

Amendments to the By-Laws were proposed as follows:

Section V, Article 7. Change "a tentative" to "the".

Section V, Article 5. Add "The Secretary, at least two months in advance, shall write to each member of the Section, giving notice of the latest date upon which papers can be accepted for the program.

Section IX, Article 3. Omit "but in no instances shall a paper be presented by any one other than its author."

Section IX, Article 4. Add "but all such discussion shall be confined to the paper or subject under consideration at that time."

The proposed changes were discussed by Messrs. Becker, Gordon, Eldred and Havenhill.

The Section then adjourned to meet at 3 P. M. for election of officers and voting on proposed changes in By-laws.

THIRD SESSION — Thursday Afternoon, August 22, 1912.

The third session of the Section on Scientific Papers was called to order in the Ordinary, on the eighth floor of the Brown Palace Hotel, at 3:35 P. M., with Mr. Eldred as Acting Chairman, and Mr. Stroup as Acting Secretary.

Acting Secretary Stroup read the minutes of the two previous sessions and the Chair stated that if there were no corrections the minutes would stand approved as read, and it was so ordered.

On motion, by Albert Schneider, seconded by C. Caspari, Jr., the amendments

to the By-laws, proposed at the morning session, were adopted; so that the amended articles now read as follows:

Section V, Article 7. The Secretary shall arrange the program for the annual meeting and furnish the Editor of the JOURNAL of the Association the program for inclusion in the number just preceding the annual meeting.

Section V, Article 5. The Secretary shall keep a record of the proceedings of the Section, shall send to the members such notice as the business of the Section may require, shall transmit to the General Secretary the names of the officers and committees elected or appointed, and notify the General Secretary of any changes in the personnel of the officers or committees of the Section, and shall furnish the General Secretary a report of the sessions held at the annual meeting. The Secretary, at least two months in advance, shall write to each member of the Section, giving notice of the latest date upon which papers can be accepted for the program.

Section IX, Article 3. Fifteen minutes shall be allowed for the reading of the paper. If the paper is too lengthy to be read in detail within the space of time, it shall be presented in abstract.

Section IX, Article 4. Each speaker in the discussion of a paper shall be allowed five minutes, but all such discussion shall be confined to the paper or subject under consideration at that time.

The Chair called for the election of officers as the final order of business before the Section. Messrs. Scoville and Asher were appointed as tellers to count the vote.

The Secretary read the list, a vote by ballot was taken, and the tellers, after a tabulation of the vote, announced that the following had been elected officers of the Section for the ensuing year:

For Chairman — Frank R. Eldred.

For Vice-Chairman — John M. Francis.

For Second Vice-Chairman — Wilbur L. Scoville.

For Secretary—Freeman P. Stroup.

The Chair said that there was no other business before the Section, and a motion to adjourn would be in order.

J. M. Francis said that before the Section adjourned, he wished to call attention to the fact that a very interesting and important joint session of the Committees on U. S. Pharmacopoeia and National Formulary was to follow this session immediately, and expressed the hope that all those present would remain for that meeting. The Chair accentuated this request, by reminding the members that the session immediately to follow was really a joint session of this Section with the two committees named, and this was all the more reason why the members should remain.

Thereupon, upon request of the Chair, the Secretary read the minutes of the session now closing, and the same were adopted as read.

Upon motion of Mr. Francis, the Section then adjourned.

ADULTERATION OF CASCARA SAGRADA.

F. A. MILLER, B. S., INDIANAPOLIS, IND.

The quality of commercial cascara bark has been so uniformly high for the past few years that little has been said concerning adulterations and inferior grades. Destructive methods of collection have continued, however, and the centers of supply have shifted rapidly to new districts, facts which augment the possibilities of new adulterations and admixtures. Such possibilities exist in the case of most vegetable drugs and an uninterrupted period of uniformity and high quality should not result in a lack of vigilance on the part of crude drug inspectors. That a close inspection of all commercial packages is essential to successful manufacturing operations is evident when the conditions controlling the collection of these products are carefully considered. This is especially true in this country where a considerable portion of the crude drugs is gathered and prepared for the market by ignorant collectors. They are responsible not only for many adulterations but also for a great many of the variations which regularly appear, the effects of which are always evident in the finished product. Many variations in these products could be and in numerous cases have been traced to certain abnormalities in the crude materials.

Such conditions as these have existed in the case of cascara sagrada and the available information indicates that the markets have not always supplied a uniform drug of definite origin. A warning has recently become current that much of the commercial bark is now composed of *Rhamnus californica* Esch. This has led to an examination of samples purchased from various sources as well as a closer inspection of all shipments of the drug recently received. The method of inspection used in this instance must of necessity be one which will eliminate the adulterant with a minimum amount of time and labor. A review of the work that has been done on the identification of the bark of different species of cascara, reveals a difference of opinion on certain important characters. This difference is most evident in the statements referring to the relative width of the medullary rays in *Rhamnus purshiana* D. C., and *Rhamnus californica* Esch. Rusby¹ states that they commonly consist of two rows of cells in *purshiana* and three or more in *californica*. He accompanies this statement with drawings by Kraemer which show the rays from one to three cells wide in *purshiana* and from three to five in *californica*. Sayre² makes no statement as to the width of the rays but includes drawings of both species. These drawings indicate that the rays in *purshiana* are all two cells wide and in *californica* from two to four. Kraemer³ gives the width as being from one to two cells in *purshiana* and from three to five in *californica*. It is to be noted that Kraemer furnished the drawings for Rusby¹ in which the width is shown to be from one to three cells in *purshiana*. Dohme and Engelhardt⁴ classify the rays in *purshiana* as usually bicellular. Moeller¹² says they are composed of two or three rows of cells. In the examination of the commercial samples above mentioned (five from New York and three from San Francisco) as well as in numerous shipments of the drug, eighty-five per cent. of the microscopic inspections have shown the medullary rays to be from one to three cells wide. Rays from one to two and from one

to four cells wide have been noted in only nine per cent. of the examinations, while those from one to five and from one to six have not exceeded one per cent. It may be stated from this, that if the inspection of cascara bark for the isolation of *Rhamnus californica* Esch., can be based upon the relative width of the medullary rays, as stated by two authorities, the commercial conditions at present are not alarming.

The most recent report of adulterated cascara bark comes from abroad, in which Perrot⁵ says that powdered cascara sagrada is sometimes adulterated on

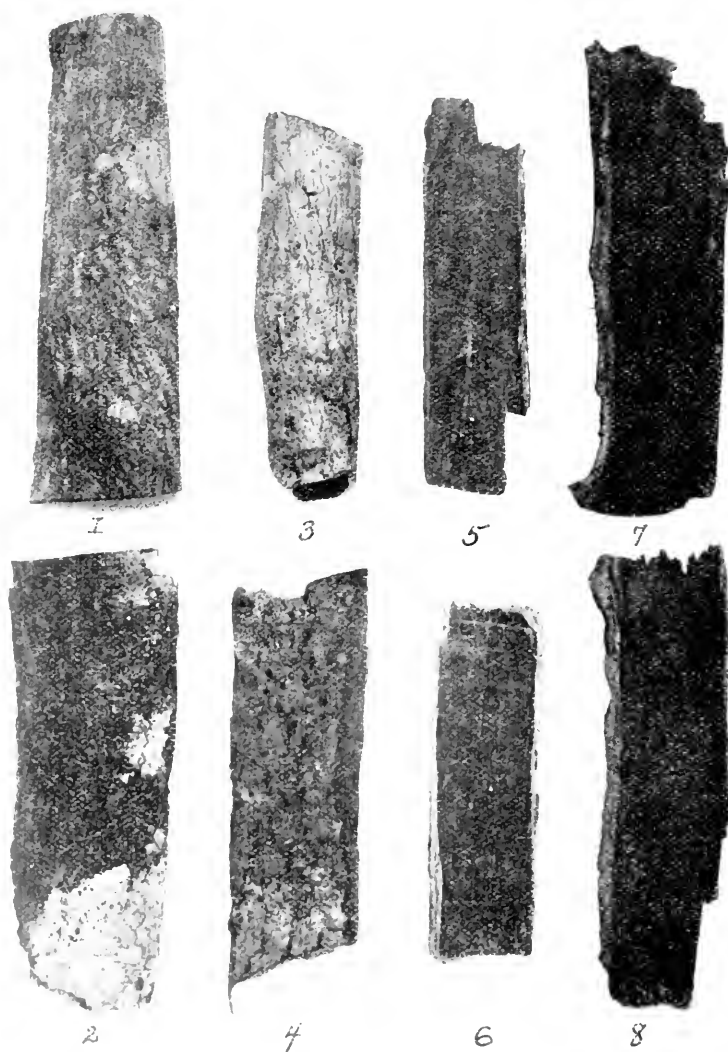


PLATE I.

Fig. 1, 3, 5, and 7, Cascara Sagrada. Fig. 2, 4, 6, and 8, Cascara Substitute.

the continent of Europe with powdered frangula. The small amount of the drug handled in this form in America, however, eliminates the possibilities of a similar occurrence. Also its suggestion as an adulterant in the crude form by Beckett⁶ does not seem well founded when the very distinct nature of the two barks is carefully considered. Its presence in cascara could readily be detected upon a basis of microscopic characters alone. Not so, however, with certain other forms that have appeared. Earlier reports indicate that the bark has varied considerably.

In 1888 Moss⁷ called attention to a spurious cascara which though he was unable to identify he felt sure was *Rhamnus purshiana* D. C. collected out of season. The following year Squibb⁸ discussed the general unsatisfactory condition of commercial cascara as it occurred during the summer of 1889. He accounts for this condition as being due to different methods of collecting and curing. Further complaint is not made until 1905 when Zeig⁹ in a discussion of Cascara Bark—its habitat, collection, supply, etc., ascribed the difference in the appearance of the crude article to climatic influences and manner of drying. Other evidence is at hand which points to actual substitution and adulteration. Rusby,¹⁰ 1890, claimed to have found this to be the case to the extent of car load lots. He attributes the cause to *Rhamnus californica* Esch. This hardly seems consistent with a statement made the previous year¹¹ which appeared as a criticism of the article by Moss. Referring to the inferior condition of cascara, he says that it is not so much a question of kind, inasmuch as Oregon and California barks are practically the same species and variety. He also states that he had been able to identify the bark *Cornus nuttallii* Audub. as a cascara substitute. Beckett⁶ characterized the market conditions for a few years prior to 1889 and believed that three species were collected and marketed indiscriminately, i. e. *Rhamnus californica* Esch., *Rhamnus purshiana* D. C. and *Rhamnus croceus* Nutt. Concerning their comparative appearance he says they are almost identical. Another substitute is mentioned by this author which he classified as some species of alder and which resembled true cascara in appearance and taste.

From the foregoing it is evident that inferior cascara sagrada has frequently found its way to the open market. It is to be noted, however, that this inferior condition has been largely due to natural causes and has consisted more of variations in the genuine bark rather than in its adulteration by other forms. The influences which brought about these variations do not seem to have been active during the past few years or if so, their effects have not been mentioned. Critical examinations of numerous commercial shipments of the drug have served to confirm the former supposition. The entire contents of each bag of drug composing these shipments was inspected and found to reveal no greater variation than those which naturally occur in all drugs of vegetable origin. It has been learned that in the inspection of all such materials certain limits, to all natural variations, must be fixed in order to accommodate the constant and unavoidable fluctuations. During the past few years the maintenance of a standard with rather strict limits has been found possible, in the case of cascara bark, owing to the fact that the drug has been of such uniform character. Nevertheless, such a condition of uniformity never continues indefinitely. Interruptions and indeed actual reversals in the market situations may occur at the least expected moment.

An occurrence of this nature or any interruption of a commercial aspect, relative to the cascara supply would seem of sufficient importance to justify its announcement. It is, therefore, with this view in mind that the present discussion has been suggested.

The appearance of a new form of inferior bark has been detected during a routine inspection of a considerable lot of cascara sagrada. Though not having been extremely troublesome it presents possibilities which if taken advantage of by the collectors would make it a difficult form to control. The bark in ques-

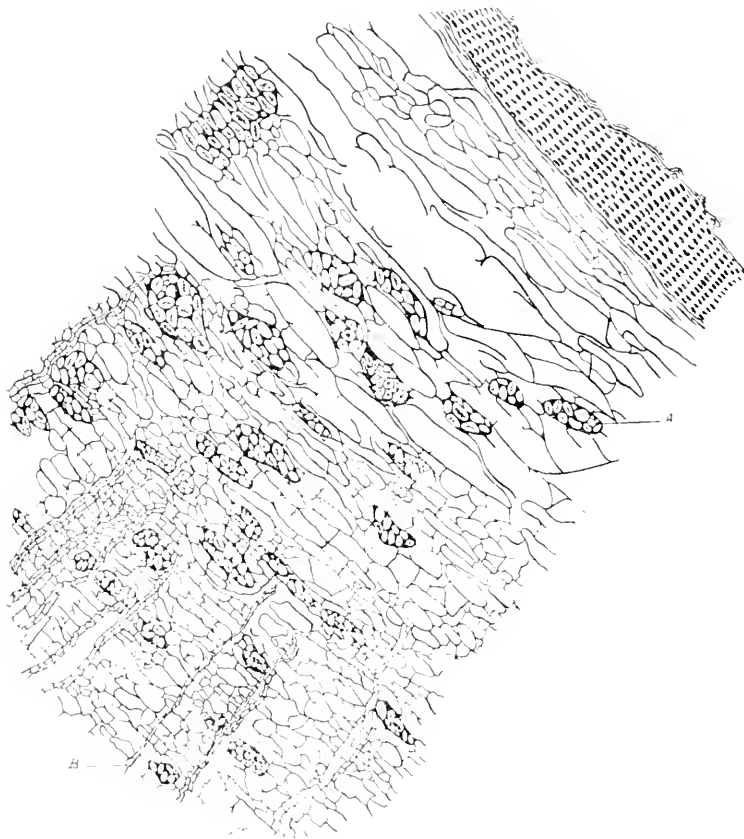


PLATE II.

Transverse section, Cascara sagrada bark. A—Sclerotic cells. B—Medullary ray.

tion resembles genuine cascara quite closely and especially is this true of the periderm. See fig. 1, 2, 3, & 4, plate I. Figures 1 and 2 are almost indistinguishable while in 3 and 4 is brought out the principle exterior difference viz., the more prominent longitudinally elongated lenticles of the substitute (fig. 4) and the small inconspicuous transversely elongated ones of the cascara (fig. 3). The inner surface, however, and especially of the large pieces is the key to the ready detection of the adulterant. This difference being largely one of color is not indicated to advantage in the photograph. This color in the false bark is a light brown with frequent darker blotches. None of the yellow or lustrous brown of

the true bark is evident. The inner surface and fracture are also diagnostic, being in the spurious article, respectively striate and fibrous, while in the cascara they are smooth and short. The bark is practically odorless and the taste is only that of astringency with slight bitterness. The size and form of the adulterant cannot be regarded as important characters since they both exhibit about the same range of variations as the genuine bark. The adulterant is somewhat flatter, showing no tendency to form quills, and is slightly thicker.

Turning to the microscopic structure, this is found to disclose an even greater



PLATE III.

Transverse section of bark, Cascara substitute. C—Bast fibers. D—Medullary ray.

difference than the external features. (See plates II and III). These plates were outlined with a camera lucida attachment under a magnification of 87 diameters and the detail filled in under a magnification of 385 diam. It will be noted from these plates that the extreme width and conspicuous nature of the medullary rays, the difference in the bast fibers and the absence of sclerotic cells are the principle features by which the adulterant may be distinguished from the true bark. A consideration of all histological elements is unnecessary and of no practical value in this particular case. The cortical portions of the bark have not been included in Plate III on account of the absence of any important structures.

The outer and inner layers of this area are to all practical purposes the same in both cases and could be disregarded in routine inspections.

Although the form herein described has not been identified it is seen to possess none of the taxonomic characters of the genus *Rhamnus* and so can be eliminated from this group of plants. Of greater importance, however, than its identity is its isolation from the true bark. To accomplish this, all commercial packages of the crude drug should receive a careful botanical inspection. This inspection should not only cover all commercial packages but also every portion of these packages. This is best carried out during the process of manufacture when all packages must of necessity be broken and the drug handled in the loose form.

BOTANICAL DEPARTMENT, ELI LILLY & COMPANY, Indianapolis, Ind., July, 1912.

BIBLIOGRAPHY.

- (1) Rusby — Proc. Am. Pharm. Ass. Vol. 38, 1890, 203.
- (2) Sayre — Am. Jr. Pharm. 1897, Vol. 69, 126.
- (3) Kraemer — Botany and Pharmacognosy. 4th ed., 524.
- (4) Dohme & Engelhardt — Monograph No. 1 Research Laboratory, of Sharp & Dohme.
- (5) Perrot — Journ. Pharm. Chem. (6) 13, 161.
- (6) Beckett — Pharm. Era. 1889, 132.
- (7) Moss — Pharm. Journ. and Trans. Vol. 649, 19, 1889.
- (8) Squibb — Ephemeris. 1889, 1243.
- (9) Zeig. — Pharm. Era. 1905, 150-151.
- (10) Rusby — Proc. Am. Pharm. Ass. 1890, Vol. 38, 212.
- (11) Rusby — Proc. Am. Pharm. Ass. 1889, 37, 322.
- (12) Moeller — Pharm. Centralhalle. 1882, No. 28.
- (13) Scaft. — Pharm. Post. 1897, 431.
- (14) Prescott — New Preparations. 1879, 27.
- (15) Brown — Western Drug. 1905, 701.
- (16) Kew Bulletin. 1908, No. 10.
- (17) Schneider — Pacific Pharm. 1909, 2, 463.
- (18) True & Klugh — Proc. Am. Pharm. Ass. 1909, 57, 824.
- (19) Henkel — Bul. Bur. Plant Industry, U. S. Dept. Agri. 1909, No. 139, 38-40.

ERGOT AND ITS ACTIVE PRINCIPLES.

H. H. DALE, M. A., M. D.

Director of the Wellcome Physiological Research Laboratories, Herne Hill, London, England.

Although ergot has long been established as one of the most valuable drugs at the disposal of the physician, its pharmacology remained, until the last few years, in a state of uncertainty and confusion.

Several causes contributed to this unsatisfactory result. In the first place the systematic position of ergot, as a fungus, rendered the chemical isolation of its active constituents a matter of peculiar difficulty. The search was further complicated by the fact that the most diverse opinions prevailed as to the type of physiological action which should be regarded as characteristic of a principle to which the therapeutic effect of ergot could be attributed. To some extent this difficulty still prevails. Not a little of the confusion, again, was due to the almost reckless manner in which successive observers bestowed names suggestive of chemical individuals on the crudest of extracts, or renamed substances isolated by their predecessors, through failure to compare their own results with those

already published. As instances of these tendencies may be cited, on the one hand, the name "Ergotin" still used especially in German literature, which was assigned in turn by Wiggers, Bonjean, Wenzell, Wernich, Yvon and others, in each case to a quite different kind of crude extract; and, on the other hand, the names picrosclerotine, and secalin, given by different observers to the one ergot alkaloid which, at that time, had been obtained in pure condition, and which Tanret, who first isolated it, had named "ergotinine."

This isolation of ergotinine by Tanret, in 1875, may be regarded as the first step of real importance towards the recognition of the specific active principle of the drug. It is remarkable, indeed, how nearly the problem was solved at this comparatively early date in the history of its investigation. Tanret's ergotinine has been found, as already mentioned, by several subsequent observers, and its formula has now been definitely settled by the analyses made by Barger and Carr, whose correction of that originally given has been confirmed by Tanret himself. In one respect Tanret's results have not been substantiated by recent work. Finding that ergot yielded, in addition to the easily crystallizing alkaloid, a further quantity of alkaloid giving practically identical chemical reactions, but refractory to crystallization, Tanret regarded this latter as an amorphous form of the same alkaloid.

In this assumption he was undoubtedly in error, the amorphous alkaloid being, indeed, closely related to, and easily formed from the crystalline, but not chemically identical with it. The failure to recognize this difference, though a small point in itself, had a far-reaching effect on the pharmacological history of the drug. On the basis of clinical results, obtained either with the amorphous alkaloid, or with acid solutions of the crystalline alkaloid, in which the amorphous is rapidly formed, Tanret concluded that he had isolated the active alkaloid of ergot. When, however, his alkaloid was subjected to pharmacological experiment by Kobert, the crystalline ergotinine as being that of which the purity could be guaranteed, was naturally taken, and injected in fresh solution. Kobert rightly concluded that it has practically no activity; and since, according to Tanret, the amorphous alkaloid was chemically identical with it, ergotinine was dismissed as of no pharmacological interest, though it still retained some vogue in practical therapeutics. As a result the chemical investigation of the drug was again given over to the preparation and testing of crude resinous products, though the work of Kobert in particular did something towards determining the manner which the specific toxic effects could be recognized. Kobert claimed to have separated from ergot three principles, which, though not chemically pure, had each a separate and distinct physiological action. One of these, "ergotinic acid," was admittedly of no therapeutic interest, having an action which Kobert regarded as related to that of saponins, and need not be further considered. A second, "cornutin," a resinous alkaloid preparation, was found to produce convulsions in frogs and mammals, and was regarded by Kobert as responsible for the convulsant type of ergotism, prevalent in most of the epidemics of ergot-poisoning in northern and eastern Europe. The nature of the substance producing this convulsant action, in Kobert's experiments, is one of the points in the pharmacology of ergot which still remains obscure. According to the method of preparation, "cornutin" must have contained the alkaloid now known as "ergotoxine;" but

this latter does not possess the peculiar action in question. Subsequent observers have failed to obtain from ergot an alkaloid possessing this action, and it is admitted by Kobert and his pupils that their own recent attempts to obtain it have not succeeded. The preparations commercially obtainable under the name "cornutin" consist of more or less impure and resinfied mixtures of the known ergot alkaloids, and have not the marked convulsant action. Whether Kobert was dealing with a peculiar decomposition product or with an alkaloid occurring exceptionally in the batch of ergot with which he worked will probably never be settled; in any case "cornutin" cannot be regarded as a chemical entity or a normal ergot constituent. Kobert's third active principle was an acidic resin, named "sphacelinic acid." This was found to produce the gangrene which formed the predominant feature in the epidemics of ergotism in France, as well as a well-marked gastro-intestinal inflammation. Experimentally the symptoms were seen most typically in fowls. Jacobj's experiments were directed to a closer chemical characterization of the active principle of Kobert's sphacelinic acid. By ethereal extraction he obtained from ergot a yellow substance, producing gangrene in fowls, to which he gave the name "chrysotoxin." By extraction with organic acids he separated from this an alkaloidal fraction consisting of a crystalline inert alkaloid, undoubtedly identical with Tanret's "ergotinine," but called "secalin" by Jacobj, and an amorphous substance, of high physiological activity, which he called "sphacelotoxin." This latter, for reasons which now appear to be inadequate, Jacobj described as a non-nitrogenous resin, in spite of the fact that his analyses of "secalintoxin" (i. e. "secalin" + "sphacelotoxin") and of secalin (=ergotinine) show identical percentages of nitrogen.

With regard to the therapeutic bearing of these investigations, Jacobj regarded sphacelotoxin as the bearer of the therapeutic as well as the toxic properties of ergot. Kobert, at one stage of his investigation, attributed the therapeutic effect on uterine activity to "sphacelinic acid," at another to "cornutin." Probably the main effect of these researches on the course of ergot investigations was the establishment of the cock's-comb test as an empirical measure of the activity of the drug. From the chemical point of view the subject was left, in 1897, in a far worse position than that to which Tanret had brought it in 1875, and the official pharmacological teaching concerning ergot became once more a matter of complicated terminology for ill-defined substances.

This was the state of affairs when, in 1904, an investigation was begun at the Wellcome Physiological Research Laboratories. Those responsible for this soon came to the conclusion that it would be fruitless, in the first instance, to search for a principle endowed with all the physiological actions which, at one time or another, had been attributed to ergot, and associated, on inadequate evidence, with its therapeutic value. The first step, rather, must be to take some characteristic action, which could be regarded as probably the effect of one active constituent, and endeavor to ascertain the nature of that constituent. It would then be possible, if a chemically pure principle were obtainable, to investigate its relation to other types of action, and to search further for other principles, if it became clear that more than one was involved. It seemed natural, at that stage in the history of the drug, to start by examining and further analyzing the action of preparations made according to the methods of Kobert and Jacobj. The re-

sults of this preliminary investigation are embodied in the first paper by H. H. Dale, in which a highly characteristic effect on the function of the true sympathetic system is described. All the preparations tested had a potent stimulating action on plain muscle, succeeded by a paralysis of motor sympathetic effects, while the inhibitor actions of the same system were left unaffected. The most readily observed instance of this action was the fall of blood-pressure resulting from injection of the suprarenal active principle, in place of its normal, typical, pressor action. It may be noted, in passing, that this so-called "vasomotor reversal" test has been the subject of some criticism by those who have attempted to use it as an indication of ergot-activity in general. It is desirable to make it clear that its originators never claimed for it any value except as a test for a particular active principle, and that it is not surprising that others have failed to find it applicable to extracts owing their activity chiefly to other substances. The search for the substance producing this action was conducted by G. Barger of the Wellcome Physiological Research Laboratories, working in conjunction with F. H. Carr of the Wellcome Chemical Works, Dartford, their results being constantly controlled by Dale's physiological experiments. They were soon able to identify the active substance as an alkaloid, closely resembling Tanret's ergotinine in many of its chemical properties, but differing from it in solubility and in the fact that it could not be crystallized as a free base. They were able to obtain it pure however, in the form of its salts, many of which crystallize readily. In this respect, again, it differs from ergotinine, the salts of which have resisted all attempts to crystallize them, though the base itself crystallizes well. A physiological examination of the pure salts of the new alkaloid showed that it not only possessed the characteristic type of action which afforded the clue to its isolation, but produced typical gangrene of the cock's-comb and the other toxic actions ascribed by Kobert to "sphacelinic acid" and by Jacoby to "sphacelotoxin." To this active amorphous alkaloid, with crystalline salts, the name "ergotoxine" was given by Barger and Carr.

By one of the not infrequent coincidences of scientific work F. Kraft, who had also for some years been working at the chemistry of ergot, arrived almost simultaneously at the conclusion that ergot, in addition to Tanret's crystalline ergotinine, contained a second, amorphous alkaloid. The results of his investigation, which also threw much light on the chemistry of some of the inactive constituents of the drug, were published only one month after Barger and Carr's preliminary note, which had escaped his notice. His separation of the two alkaloids was based on the different solubilities of their sulphates. Since he obtained these only in an amorphous form, there was no guarantee that the separation was complete, and he made no analyses. At the same time, on the basis of observations as to the methods by which each alkaloid could be converted into the other, he put forward the suggestion that the amorphous alkaloid was a hydrate of the crystalline ergotinine, and, being unaware that it had been named just previously by Barger and Carr, who provisionally named it "hydro-ergotinine." Having crystalline salts of their alkaloid fit for analysis, Barger and Carr were then able to confirm Kraft's suggestion as to the relation between the alkaloids, and Kraft himself subsequently obtained crystalline salts by their method, and further confirmed the identity of his alkaloid with theirs and its relation to ergotinine. The

chemistry of the ergot alkaloids being thus placed on a satisfactory footing by the concurrent though completely independent work of two laboratories, it became of importance to examine the relation of these alkaloids to previously described "active principles." As the result of a lengthy investigation, Barger and Dale came to the conclusion that the "amorphous ergotinine" of Tanret consisted largely of the alkaloid now known as "ergotoxine;" that the crystalline ergotinine was, in reality, inert, and only appeared to possess activity on account of the readiness with which, in watery acid solution, it became converted into its intensely active hydrate "ergotoxine;" that preparations such as "sphacelinic acid," "chrysotoxin," "sphacelotoxin," owed all their activity to the presence of ergotoxine in greater or less proportions. It should be noted that, since ergotoxine has weak acid as well as weak basic properties, and since its salts, moreover, form colloidal solutions in water, its presence as an activity-conferring constituent in acidic resins is easily explained. Barger and Dale published a table of synonyms, indicating the importance of ergotoxine as the active constituent of the various principles described up to that date. At the same time they recognized and, indeed, explicitly stated, that certain features of the action of some of the most widely used extracts of ergot could not be accounted for by the presence of ergotoxine. The fluid extract of the U. S. P., being an acid alcoholic extract, contains, indeed, a large proportion of the ergotoxine of the ergot from which it is made, and doubtless owes to this a great part of its therapeutic value. Edmunds and Hale recently arrived at the conclusion that the effect of this extract on the uterus runs parallel to its activity as determined by the cock's-comb test, which they rightly regard as a measure of its ergotoxine value. On the other hand, such preparations as the "Extractum Ergotae Liquidum" of the British Pharmacopoeia, which has a great vogue among practitioners in Great Britain, usually contains mere traces of ergotoxine. Yet this extract exhibits two definite types of physiological action, which have been recommended by different authorities as measures of its therapeutic value—it has a pressor action, of the adrenaline type, and it causes pronounced contraction of the isolated uterine muscle. Barger and Dale proceeded to investigate the nature of the substances responsible for these types of activity. Shortly before this, Vahlen had announced the discovery in ergot of an active principle with no toxic properties, but possessing a specific stimulating action on the normal, coordinated contractions of the pregnant uterus. To this principle he gave the name "clavin," and was soon able to cite clinical evidence in favor of its activity. Barger and Dale examined this preparation and found it to be a mixture of aminoacids and quite devoid of activity. Their statement as to its chemical nature was confirmed by Van Slyke, who separated it into leucin, isoleucin, and valin, and determined the proportion of each which was present. Several other observers (Cushny, Kehrer, Cronyn and Henderson) had also found it inactive. Vahlen's results are, therefore, of interest only as evidence of the great difficulty in obtaining and interpreting clinical evidence as to the effect of drugs on uterine activity. It became necessary to look elsewhere for the active constituents, other than ergotoxin, of which the existence was evident. For a long time no success was obtained, for the principles in question could not be removed from ergot extracts by any of the methods ordinarily employed for the isolation of alkaloids. It seemed possible, however,

that ergot, being a fungus, might resemble the bacteria rather than the higher plants in its metabolic processes, and that an investigation of physiologically active substances produced by the putrefaction of proteins might furnish a clue to the nature of the other active ergot constituents, and suggest methods for their isolation. A resemblance between ergot constituents and the products of putrefaction was, indeed, suggested by Buchheim as long ago as 1874. But the significance of this suggestion, as of Tanret's work on the alkaloids, which followed a year later, had been obscured by the investigations of the intermediate period. Barger and Walpole accordingly studied the pressor constituents which occur in putrid muscle extracts, as Abelous and his pupils had previously shown. They found them to belong to the series of amines, formed from amino-acids by splitting of carbon dioxide, the most abundant being isoamylamine (from leucine), the most active *p. hydroxyphenylethylamine* (from tyrosine). Dale and Dixon showed that the action of these bases is of the same general type as that of the supra-renal active principle. Meanwhile, the probability that the other active constituents of ergot were to be sought in this direction was increased by the work of Rielander who extracted from ergot the well-known but almost inactive bases putrescine and cadaverine. Applying the experience gained with putrid meat, Barger was able to prove the presence of the pressor amines in the ordinary liquid extract of ergot, and to show, in conjunction with Dale, that practically the whole of the adrenine-like pressor action possessed by such extracts, and widely used in England at the time as a basis for their physiological standardization, was due to the presence of *p. hydroxyphenylethylamine*. This substance has been produced artificially by a number of synthetic methods and is now obtainable commercially under the name "Tyramine."

The investigation was not yet complete, for "Tyramine" was found to resemble adrenine not merely in its pressor action, but in practically all its effects, reproducing very closely the effects of stimulating nerves of the true sympathetic system. Among such, a highly characteristic action is the inhibition of the tone and rhythm of the uterus of the virgin cat, and this is typically reproduced by "Tyramine." On the other hand, it has been shown by Kehrer that isolated uterine muscle from any animal responds by tonic contraction to small doses of ergot extracts, and that the uterus of the non-pregnant cat exhibits this effect particularly well. Though ergotoxine has a powerful tonic effect on the cat's uterus *in situ*, it has a comparatively weak action on the isolated organ; it was clear, therefore, that some other principle must be present of sufficient power in this direction to overcome the inhibitor effect of tyramine. In searching for this, Berger and Dale made use of the methods elaborated by Kutscher and his school for the separation of bases from extracts of meat or putrefaction mixtures.

They chose for the investigation the ergot extract which produced Kehrer's effect most intensely, viz. the "Ergotinum Dialysatum" of Wernich. In the end they succeeded in isolating a small quantity of the crystalline picrate of a base which, while it resembled histidine in its properties of solubility and precipitation by reagents, and gave the diazo reaction of Pauly with great intensity, differed from histidine in producing Kehrer's effect in extreme dilutions, whereas histidine is quite inert in this direction. It was a natural supposition that the

base might bear the same relation to histidine as "tyramine" to "tyrosine." By another of the curious coincidences which have occurred in the course of this investigation, the same base had been obtained from ergot by Kutscher simultaneously and independently. At the same time Ackermann, by putrefaction of a broth containing histidine, had obtained a supply of the base which results when histidine loses CO_2 . Barger and Dale found the histidine derivative identical with their ergot base, while Ackermann and Kutscher concluded that the two were similar but not identical. It has since been shown that the apparent difference in physiological action, on which Ackermann and Kutscher based their conclusion, was due to an unsuspected variation of the conditions of experiment, and it may be regarded as established that the principle in ergot mainly responsible for its intense tonic action on isolated uterine muscle is b. Iminazolyethylamine (i. e. histidine minus CO_2). This is now prepared synthetically, and obtainable in commerce as "Ergamine." Its action has been investigated and described by Dale and Laidlaw, who have drawn attention to the interesting similarity between the effects which it produces on intravenous injection, and those which follow the injection of various tissue extracts and form the main feature in the clinical picture of the "anaphylactic shock." At the same time it has been demonstrated that the base can be given hypodermically in small doses without producing bad symptoms, but with marked effect on the uterus.

Engeland and Kutscher subsequently isolated from ergot agmatine, the analogous amine from arginine, and attributed to it a similar action. According to Dale and Laidlaw the effect of agmatine is very weak, and it cannot contribute in any significant degree to the action of ergot.

It is not suggested, of course, that all the constituents possessing a physiological action of any kind, which occur in any sample of ergot or its extracts, have been isolated and identified. On the contrary, it has been obvious, from the latter portion especially of Barger and Dale's work on this subject, that the casual occurrence of unusual bases is only to be expected in extracts of a fungus which shows many similarities in its action to certain putrefactive bacteria. It is even uncertain, in any particular case, how much of the active amine constituent must be attributed to the metabolism of the ergot itself, how much to superadded putrefactive changes occurring either before or during extraction. What is quite certain is that good, dry ergot contains not merely ergotoxine, but also the bases in question, though the proportion of these latter may well be increased in the preparation of such a product as the Liquid Extract of the B. P., and still more so in the dialysed preparations. It may further be claimed that the substance responsible for each of the various physiological actions, hitherto suggested as a basis of standardization, has been isolated and identified. The effect on the cock's-comb was given practical application for standardization by Houghton, who gave details by observance of which a quantitative indication was obtainable. This has been recently verified by Edmunds and Hale. This action, like the "vasomotor reversal" described by Dale, is due to ergotoxine, and while the practice of different observers may lead them to prefer one or another of these methods, they are testing, in either case, for ergotoxine only. When the measurement of pressor effect, in dog or cat, as recommended by Wood and by Cronyn and Henderson in America, and by Dixon, Goodall and others in England, is adopted

as an index of activity, the measurement appears to be one of ergotoxine — "tyramine" in the case of the Liquid Extract of the British Pharmacopoeia, Kehler's method, again, if a cat's uterus be used, is apparently a measurement of "ergamine" content only; on the other hand, the isolated guinea-pig's uterus is exquisitely sensitive to ergotoxine as well as to ergamine." It will doubtless be possible by a combination of methods to work out a rational system of ergot standardization when it is once decided which of the principles are therapeutically desirable and in what relative proportions they should occur. What is needed above all for the settlement of this aspect of the ergot-problem is an accumulation of accurate clinical observation with the pure active principles. Meanwhile it may be said that results hitherto available appear to point to the superiority of a preparation containing the three chief active principles in appropriate proportions, as compared with any one of them separately. It should be further remembered that ergotoxine is the only one of them for which ergot is needed. The others are much more easily obtained by synthesis in the laboratory, and it may be assumed that the ideal preparation is one containing a definite quantity of pure ergotoxine from ergot, with the amines added in due amount. A preparation containing 1 mgm. of ergotoxine to 5 mgms. of "Tyramine" and 0.05 mgms. of "Ergamine" has given highly satisfactory results in practice. But pending more decisive clinical information it may be suggested that no one method of standardization can yet claim exclusive value or unquestioned superiority, whatever be its accuracy in determining the proportion of one or more of the active principles.

THE A. PH. A. WOMEN'S SECTION.

At one time in the early history of the A. Ph. A., soon after the dawn of the organization, and long before the day of women's clubs, the members gravely discussed the question of women at annual meetings. It was at the time when Procter and Parrish watched the destinies of the Association. It was finally decided to make the conventions family outings and the practice has grown until now the women equal the men in number. The entertainment program is made up with a view of letting the men attend all the sessions of the Association, but giving the women attention while the men are at work. Somehow many of the members cannot withstand the temptation to leave business and scientific sessions behind and join the women. Perhaps more men would go if official positions did not prevent. It is now proposed to form an A. Ph. A. W. S. and keep the women busy while the men are at work. The council has given its sanction and President Day will name the temporary officers and committees. This organization may result in a program of entertainment so arranged that all will take part at the same time. Some have advocated a post convention entertainment with the president's reception Monday night as the only deflection during the week of meetings.—*Meyer Bros. Druggist.*

Section on Pharmacopoeias and Formularies

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE JOINT SESSION OF THE COMMITTEES ON THE U. S. P. AND NATIONAL FORMULARY.*

A joint session of the committees on U. S. Pharmacopoeia and National Formulary, in conjunction with the Scientific section, held as a tentative section-meeting, under authorization of the Council, and presided over by L. D. Havenhill, of Lawrence, Kansas, was held immediately succeeding the third session of the Scientific Section on Thursday afternoon, August 22, 1912. E. Fullerton Cook, of Philadelphia, acted as Secretary.

The Chair made some brief introductory remarks explaining the origin of the movement which had resulted in this joint meeting.

The Chair announced that the first order of business would be the reading of reports of the committees which would logically report to a section of this kind. The first thing on the program, was the report from the Chairman of the U. S. Committee of Revision of the Pharmacopoeia, Prof. J. P. Remington, but as he had not yet arrived, the second report on the program would be taken up, namely, that of the Committee on National Formulary, which would be presented by Prof. W. L. Scoville, in the absence of the Chairman of the committee, Prof. C. Lewis Diehl.

The Chair stated that inasmuch as the report embodied a recommendation, and the next paper on the program, "Points of Contact Between the U. S. P. and N. F." bore directly on that recommendation, he thought it would be well to listen to that paper before taking action, and he would call on the author, E. Fullerton Cook, of Philadelphia, to present it.

The Chair said the papers just read before the Section were open for discussion.

C. E. Vanderkleed moved that the report be accepted, and that the recommendation contained therein be approved by the joint meeting. He added that of course it was understood that this meeting had absolutely no control over the matter, and could only recommend.

H. V. Army, in seconding this motion, called attention to the fact that Prof. Diehl, Chairman of the committee, had made two recommendations, and he supposed Mr. Vanderkleed's motion referred to the one which recommended deferring publication of the National Formulary until after the Pharmacopoeia was published. Mr. Vanderkleed replied in the affirmative, and said this was given preference in the report.

Thereupon, the motion to receive and adopt was put to a vote and carried.

* Now known as the Section on Pharmacopoeias and Formularies. Papers and Reports presented at this session will be printed separately.

The Chair asked if there were any remarks upon Mr. Cook's paper. None were offered, and the paper was referred to take the usual course.

The Chair next called for report of the Committee on Unofficial Standards, as following this line and coming naturally in this connection.

Prof. Army suggested that Prof. Remington was now in the room, and it might be proper here to take up the first order of business, that of report of the Committee on U. S. P. Revision.

The Chair said it seemed to him desirable, as long as the session had the work of the National Formulary Committee under advisement, to finish up that subject and then take up the remainder of the work. However, if there was any objection to that, the report of Prof. Remington might be presented at this time.

Prof. Remington said he was "always one of the innocents," and wanted to know what the authority was for this so-called Section.

The chair replied that this matter had been explained before Prof. Remington came into the room. This Session, he said, was the result of a communication addressed to the Council by Ex-President Oscar Oldberg, of Chicago, requesting that something be done towards creating a Section of this Association which would have to do with matters relating to the Committee on U. S. P. of the American Pharmaceutical Association. This session had been authorized by the Council as a tentative proposition, for the express purpose of ascertaining whether it would be deemed advisable to organize such a permanent Section.

Prof. Remington expressed the conviction that this session could not be properly or legally considered as that of a Section of the Association. It might or might not be desirable to have another Section; that was a matter for thoughtful consideration. As he personally knew, four sessions of as many different branches of the Association were going on at this very time. He himself had just been called upon to appear before two or three meetings at the same time. The practical question was, Where were the members going to find the time to attend a multiplicity of Section sessions?

In answer to a question by Dr. J. M. Francis, as to whether this was not intended to be a joint session of the Committees on U. S. P. and N. F. with the Scientific Section, instead of a meeting of the two committees named as a separate Section, Mr. Eldred stated that he had been informed by the General Secretary that a joint session of the two committees with the Scientific Section had been authorized, to determine the advisability of creating a Section, and the two chairmen had been advised to get together and hold such a joint session this afternoon.

Prof. Remington said if the session was to be treated as a part of the work of the Scientific Section—a sort of symposium of the Pharmacopoeia—it was all right; but he doubted the propriety of creating a separate Section.

The Chair concluded the discussion by stating that the Council, at its sixth session last night, had authorized the chairmen of the A. Ph. A. Committee on U. S. Pharmacopoeia and National Formulary to hold a special session—to determine whether it would be advisable to create the proposed Section on the U. S. P. and N. F. The specific purpose in view was to consider the question of forming a new Section to deal specifically with these matters, thus relieving the Section on Scientific Papers of their discussion.

The Chair stated that, without objection, the session would now proceed to finish up the subject of National Formulary work, before taking up the question of the Pharmacopoeia, and called on Mr. Cook to present the report of the Committee on Unofficial Standards, of which Mr. Geo. M. Beringer was chairman.

Mr. Cook said that he would not read the entire report, as it was very voluminous, but would give the substance of its leading features. The report, he said, was followed by a monograph on each of the forty-five substances treated of.

Dr. Francis suggested that Mr. Cook merely read the titles of the articles upon which the report was rendered, and the Chair stated that as the titles were being read, if anyone present had any particular interest in the monograph on a given subject, he could ask to have it read.

Philip Asher moved to receive the report as read, and this motion was seconded by Mr. Scoville.

Dr. J. M. Francis moved to amend by adding that the recommendation of the Chairman of this particular committee be referred to the Council for action, as it was absolutely necessary for the Council to act before the adjournment of the Association. This recommendation, he said, involved the appropriation of a certain amount of money, and also appointment to vacancies on this committee.

Prof. Asher indicated his acceptance of this amendment.

The Chair thereupon put the vote that the report be received and referred to the Council for its action, and the motion prevailed.

The Chair said this disposed of the subject matter in hand—the report of the Committee on National Formulary and matters related thereto. Referring to Mr. Cook's paper, he said there had been appointed a harmonizing committee on U. S. P. and N. F., which he had no doubt would remove dissension as far as possible.

The Chair then stated that this brought the work of the session up to the point where U. S. Pharmacopoeia matters could be taken up, and in the absence of Mr. Remington from the room at the moment he would ask Mr. Eldred to take the chair, while he read his own report as Chairman of the A. Ph. A. committee.

Prof. Scoville moved to receive the report just read and refer it for publication, and this motion was seconded by Dr. Francis.

Prof. Remington, who had returned to the room, said he was sorry that Prof. Havenhill did not make this report to the Pharmacopoeial Convention, as that was the place for it. The work of revision was now perhaps two-thirds completed, and he asked if it was proposed that the Committee of Revision should be abolished and another Convention assembled, to carry out the radical changes he advocated. The American Pharmaceutical Association did not make the United States Pharmacopoeia. It was a delegate convention that did that, and its members represented various bodies throughout the country. There was no sound reason, he thought, for most of the criticism offered, and the proposition to publish the Pharmacopoeia in three volumes was an unheard-of thing in the history of Pharmacopoeias. The doctors would certainly object to a book giving the properties of various remedies—a book on therapeutics, in short. The Committee of Revision had begun its work two years ago, on the lines laid down by the Pharmacopoeial Convention, at which the doctors of the country were fully represented. He could see no justification in this proposition to bring about a totally

new plan of procedure at this time—a plan which was perfectly impossible of accomplishment, and one which could serve no good purpose. If it was intended merely to receive the report and publish it as an individual expression of view, he had no objection; but he strongly opposed the idea that it should carry with it any endorsement by the American Pharmaceutical Association as touching the U. S. Pharmacopoeia.

Mr. Scoville said he thought Mr. Remington was speaking under a misapprehension. This was a report of the Committee of the A. Ph. A. on U. S. Pharmacopoeia, of which Mr. Havenhill was chairman—a report to the Association. His own motion was simply to receive the report and refer it for publication.

Mr. Francis thought that, while it was entirely proper to receive the report and refer it in the usual way to the Publication Committee, this action did not commit the Society to the recommendations made by the author.

Mr. Havenhill disclaimed any purpose of criticizing the present Pharmacopoeial Revision Committee. He realized that the Convention had met and decided on the method of procedure for the present revision. He believed, however, the movement should be begun along the lines pointed out in his paper.

Mr. Vanderkleed asked if all the members of the committee had signed this report. Mr. Havenhill replied that it was entitled the report of the Chairman, and not the report of the Committee.

Mr. Vanderkleed, said that, as it appeared that this was in reality a paper by the Chairman of the Committee, and not really a report of the Committee on U. S. P. to the Association, it was perfectly proper to receive it just as any other paper was received. It was not signed by the committee, and was not a report from the committee.

Mr. Arny said he was glad Mr. Vanderkleed had made this point clear. The report of the Committee on National Formulary, he said, had been signed by Chairman Diehl only, but the report had been gone over by the members of the committee and approved. The paper under discussion should be considered simply as a paper contributed by the Chairman of the Committee on U. S. P.

After some further discussion of the subject, participated in by Messrs. Scoville, Gordon, Eldred, Francis and Remington, a suggestion by Mr. Francis, approved by Mr. Remington, that the author insert a statement by way of introduction to his paper that, in the absence of a report from the committee as a whole, the Chairman offered this as embodying his individual views on this subject, was accepted by Mr. Havenhill, who promised to correct the paper accordingly.

Thereupon, Acting-Chairman Eldred put the question on the motion to receive this paper and refer it to the Publication Committee, with the modification suggested by Mr. Francis, and it was carried.

Chairman Havenhill resumed the chair, and called on Mr. Remington to make report as Chairman of the Committee of Revision of the U. S. P. He expressed regret that this session could not have been opened by the presentation of this report by Mr. Remington, because of his absence from the hall at the time. (See October, 1912, Journal, p. 1124.)

Mr. Remington, discussing his report, said he thought that the most far-reaching question the Committee on Revision had to deal with was the question of

patents. The doctors in the Convention did not understand why such a thing as "aspirin," for instance, should not be in the Pharmacopoeia. The doctor didn't know anything about the conditions—why such a thing as he used every day was not in the Pharmacopoeia; and he wanted to throw out the whole book because the thing he used every day was not in there. But how was that to be helped? Where a patent had expired on a synthetic or controlled product, or would expire within the year, there was no trouble about putting it in the Pharmacopoeia. Indeed, the manufacturer who knew that his patent would soon run out was willing enough that his product should be put in. But it would be impracticable to have an official test for such a thing as aspirin, for the manufacturers would not allow the use of the name; and if the doctor prescribed it under some other name, the manufacturer would at once say that there was only one true and genuine aspirin, which was yellow in color, or pink, or some other color—something not found in the Pharmacopoeia. And in doing that he would claim that he was simply defending his rights.

Mr. Becker said he would like to see the Pharmacopoeia give the solubility in oil or oil base of many chemicals used. A good example was biniodide of mercury in oil. The Pharmacopoeia gave no information as to that.

Mr. Remington said that the committee having that subject in charge fully recognized the importance of this. The doctor, however, did not care to know whether it was 783.5 or 780 or 800, as long as he could get some idea in making his preparation. He said a table would be prepared by Atherton Seidel, which would go into the back of the book and contain the exact solubilities, as near as it was possible to determine them from the best available sources. The idea was to give information suitable for the doctor.

Mr. Asher moved that the report be received, and that this Section express its appreciation to Mr. Remington for the able manner in which he had presented his report.

This motion was seconded by Messrs. Scoville and Johnson and carried unanimously.

The Chair stated that the next thing in order was a paper contributed by J. U. Lloyd. It would be remembered, the Chairman stated, that one of the functions of the Committee on U. S. P. was to collect statistics regarding the frequency of use of official and non-official drugs by the medical profession in various parts of the United States. Prof. Lloyd had gone into this question on his own responsibility, with a remarkable amount of energy, as was his custom in investigating any subject. (See elsewhere in this issue for Prof. Lloyd's paper.) He asked Secretary Cook to give a summary of the paper.

Prof. Remington moved to receive the paper and refer to the Publication Committee, which motion was seconded by Mr. Vanderkleed and carried.

Prof. Remington here stated that there was so much inquiry at the present time about the progress of the Pharmacopoeia, that he would like to have the recommendation of this session that permission be given to send the paper he had read to the pharmaceutical journals throughout the country. He did not wish to forestall any thing that should properly appear in the Journal of the Association, but it would be some time, he supposed, before that came out, and if the members here believed that the public interest would be served by giving out this in-

formation, he did not suppose it would do any great harm for an exception to be made in this case.

Mr. Asher, in reply to Mr. Remington, stated that this question had come up in the Council a few days ago, about the giving of the President's Address and certain reports to the public press, and the publication of papers was left entirely to the Journal. So the only recommendation that this session could make would be to the Council.

Thereupon, Mr. Arny moved that this session request the Council of the Association to permit the release of this report of the Committee on Revision of the Pharmacopoeia to the journals other than the Journal of the American Pharmaceutical Association. This motion was seconded by C. E. Mollet and carried.

R. H. Needham, of Texas, presented his paper on "Some Practical Suggestions for Pharmacopoeial Revision."

The paper was discussed by Messrs. Remington, Asher, Arny, Clark and Mollet, after which it was on motion, received and referred to the Publication Committee.

The Chair stated that there were three or four papers on the program. As it was now 20 minutes after 6 o'clock, he would be glad to have the ideas of the members as to whether an adjourned session was desirable.

Mr. Needham thought favorably of the suggestion of having an adjourned session, but Mr. Sayre and Mr. Frazier suggested that their papers might be read by title, to save time.

Mr. Remington said he thought Mr. Sayre's paper should be read, because it was vital to this session. Mr. Sayre then presented his paper entitled, "A Plea for another Section in the A. Ph. A." (See October Journal, p. 1123.)

Mr. Mollet moved that this paper be received to take the usual course, but Mr. Clark suggested that as any proposition to create a new Section must be referred to the Council of the Association, this paper should be so referred.

Mr. Vanderkleed thought the only objection to carrying out most of the suggestions set forth in this paper was the fact that the Association did not have a meeting which lasted two weeks, instead of one. The work of the Pharmacopoeia and National Formulary was exceedingly important, but he thought it might be possible to arrange a symposium on the subject in the Section on Scientific Papers. He saw no necessity of making a separate Section.

Mr. Sayre said he was aware of the difficulties that existed. He felt, however, that a paper of this kind should be before the Association for the things he wanted to convey; and he would be glad to have it referred to the Council. In his report last year on Drug Reform, the one point he made was that the American Pharmaceutical Association should be made a clearing-house for drug chemists, and he believed here was the opportunity.

Mr. Mollet thereupon amended his motion to the effect that the paper be accepted and referred to the Council.

Mr. Cook said he wished to call attention to the fact that the purpose that Mr. Oldberg had in mind in suggesting the formation of a new Section was to relieve the Scientific Section, by gathering together each year all the papers on the subject of U. S. P. and N. F.

Mr. F. T. Gordon said that one idea in the creation of the new Section was

that the Scientific Section now had as much work as it could handle—in fact, more; and if a new Section were created, it would have a certain *prestige*. The members would contribute papers to the Section, and if only a few members were present, still, it would be a Section of the American Pharmaceutical Association, and the papers presented before it would be printed in the Proceedings and the Journal of the Association.

Mr. Remington said there was much to be said on both sides of the question, but he thought with the Chairman it was the duty of this meeting to express itself on the proposition as to whether this should be a part of the work of the Section on Scientific Papers, or whether an independent Section should be created. Personally, he preferred that it should be a Section—particularly since he had noted the interest shown by the members, heard the papers read and seen the results of this session. Papers on the Pharmacopoeia had been submitted of a character which had never been seen before. He thought it time that everyone should be heard on matters so vital as the Pharmacopoeia and National Formulary. The only objection was the one which had already been mentioned, that of having too many Sections, and having so many simultaneous sessions. This could not be helped, unfortunately, and the point was to arrange the Section sessions in such a way as not to interfere with each other. The proper thing, of course, would be to extend the meeting to ten days, instead of a week, but this would not be popular with the rank and file. This question of extension of time, however, was one that the Association must face in the near future.

For the sake of bringing the question to a vote, he would move "that this Section session recommend to the Council the creation of a Section upon U. S. Pharmacopoeia and National Formulary."

Prof. Sayre said he was somewhat particular as to the choice of a name for the proposed Section. He suggested "Formulary and Drug Standards," as that would include the U. S. P. and N. F. He was in favor of a broad policy, that would popularize the work and make it helpful to the physicians and the community at large.

Mr. Remington feared that if the question was complicated it would not be so likely to pass before the Council. He doubted the wisdom of complicating it by introducing all formulas. These were now taken care of by the Practical Pharmacy and Dispensing Section. He was in favor of limiting it to a Section on U. S. P. and National Formulary.

Mr. Eldred favored Mr. Remington's view of the matter. He thought if it was made a general Section the members would never know where papers were to go. He had changed his mind two or three times on this proposition, but it seemed to him now that it would be best to have a separate Section, provided it was understood that the Section on Scientific Papers and the Section on U. S. P. and N. F. should not hold simultaneous sessions.

Mr. Clark said he had overlooked the fact that the present session was just tentative, and that the members would be called upon to make a recommendation. He heartily favored the formation of this separate Section. He asked how it would do for this session to recommend to the Council the formation of a Section on U. S. P. and N. F., referring Mr. Sayre's paper to the Council at the same time.

Mr. Sayre said this was satisfactory, so far as he was concerned. But the words "United States" did not include the Homoeopathic or other Pharmacopoeias.

Mr. Gordin suggested the title "Section on Pharmacopoeias and Formularies," and Mr. Sayre agreed.

Mr. Remington suggested that Mr. Gordon make his motion as simple and as plain as possible.

Thereupon, Mr. Gordon put his motion in this form: That this session accept Mr. Sayre's paper and refer it to the Council, with the recommendation that a new Section on Pharmacopoeias and Formularies be established in the American Pharmaceutical Association.

The motion as stated was then put to a vote and carried.

The Chair said there was one other question to bring up, namely, that of officers for the new Section in the event of favorable action by the Council. He asked if it was the sense of the members that they should elect a chairman, vice-chairman and secretary, or whether they considered that it was better to leave such appointments to the Council.

Mr. Needham was of the opinion that the members now present, who had taken such an interest in the proposed Section, were the ones to elect its officers.

Mr. Gordon, on the other hand, thought the Council should be empowered to appoint the officers of the proposed Section for the next year, in case it acted favorably on the recommendation.

Mr. Remington said inasmuch as this was not yet a Section, he could not see how it could elect officers; therefore, it seemed plain to him that the Council should be asked to designate the first officers of the Section. He therefore moved that the Council be requested to designate the officers of the Section for the ensuing year, if it approved of the formation of such Section.

This motion was seconded by Messrs. Gordon and Sayre and carried.

The Chair stated he still had in his hands some papers which had not been presented, and he would entertain a motion that these be read by title and referred to the Publication Committee. On motion of Mr. Frazier, it was so ordered.

The Chair stated that the first of these papers was entitled, "Does the Medical Profession Read the United State Pharmacopoeia?—by H. L. Chambers, M. D. This was a paper submitted by a practicing physician, and contained some valuable information. Doctor Chambers, however, was not a member of this Association, and some special action would probably be necessary in regard to his paper.

Mr. Remington suggested that this paper might be included with the rest, and let the Publication Committee settle the question of its acceptance for publication, and the Chair stated that, without objection, this would be done.

The Chair then read by their titles the following: "To What Extent Shall Powdered Drugs be Recognized in the Ninth Revision of the U. S. P.?" by C. M. Sterling. "Getting Ready for the 1920 Pharmacopoeia," by Wm. Mittlebach. "The U. S. P. as a Stepping Stone to Higher Ideals," by W. J. Frazier. "Suggestions Relative to Standards and Methods of Analysis," by L. F. Kebler. "The U. S. P. in a Retail Pharmacy," by W. H. Varnum.

This concluded the session of the tentative Section on Pharmacopoeias and Formularies, and on motion of Mr. Needham the session adjourned.

VEGETABLE DRUGS EMPLOYED BY AMERICAN PHYSICIANS.¹

JOHN URI LLOYD, PHAR. M.

PART I—*Selection by Physicians Other than Eclectic.*

During the past year it became the pleasurable duty as well as opportunity of this writer, to make an historical study of both the beginnings and the records of the various vegetable remedies of the Pharmacopeia of the United States. This was issued as a 140 page Bulletin of the Lloyd Library, under the title, "History of the Vegetable Drugs of the Pharmacopeia of the United States."

Came then a question as to the relationship that existed between the various vegetable drugs official in the Pharmacopeia, as contrasted with vegetable reme-

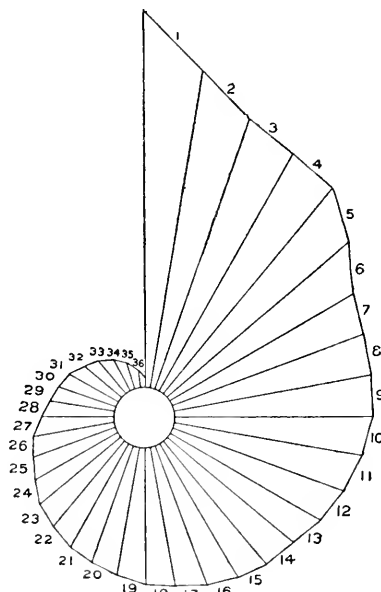


FIGURE - I

dies not thus recognized, and the extent to which remedies introduced by the Eclectic school of medicine, as well as those peculiar to the Eclectic practice, were employed by physicians of other schools. This led to the preparation of a list of drugs, embodying the principal remedies employed by the Eclectic school of medicine as well as those official. This was distributed to a number of physicians of *schools other than Eclectic*, all of whom were known to use vegetable remedies, and all of whom were graduates of colleges of recognized professional standing.

The reports received from these physicians were of exceeding interest, and furnished exceptional opportunity for comparative study of the remedies employed. The summary made from these reports is as follows, the accompanying diagram graphically illustrating the same, Fig. 1.

This diagram portrays in graphic form the comparative values of the remedies

¹The author expresses his thanks to the house of Lloyd Brothers for permission to summarize the first two reports from their researches, as well as for their financial contribution to the expensive general study (No. 3) herewith presented.

named by the physicians contributing to this report. This figure, as well as Figure II (p. 1231), and III (p. 1236), is the device of Everett I. Yowell, Ph. D., Assistant Professor of Astronomy in the University of Cincinnati. He describes the construction of the shell as follows:

"The graphical representation of data is made, usually, either by straight lines of length proportional to the several given quantities, or by surfaces similarly proportional. The rectangle and circle are of frequent use, but are not available where many quantities are to be represented, on account of the great number of separate figures. In a case like this, a circle, for instance, may be divided into a set of sectors to represent the quantities, by making the central angles proportional to the quantities. This method is objectionable, if there is much disparity in the size of the several quantities, as in the present case; for the circle would have to be of enormous size to represent clearly the smaller quantities. The objection may be met by making a new figure, based on the circle; the central angles of the sectors are equal, but the lengths of the radii vary. Such sectorial areas are represented by numbers whose *square roots* represent the radii, enabling us to use a set of numbers for radii, much smaller than the given set. The bounding areas are not now continuous; this is remedied by replacing each arc by an inclined line, through its middle point, so drawn that consecutive ones meet on the radius common to two sectors. Thus we form a conch (*shell*) that expands as it curls, each partition of which represents one of our quantities. The center has been cut out of the present illustration to avoid the confusion of the meeting radii; the original numbers were increased by the proper amount (one in this case) to allow for this.—EVERETT I. YOWELL, PH. D

TABLE NO. I.

(Selecting of remedies by physicians, none of whom were Eclectic.)

1. Echinacea was named by 148 physicians.
2. Aconite was named by 108 physicians.
3. Macrotys (*Cimicifuga*) was named by 96 physicians.
4. Bryonia was named by 91 physicians.
5. Gelsemium was named by 89 physicians.
6. Pulsatilla was named by 60 physicians.
7. Veratrum was named by 57 physicians.
8. Belladonna was named by 55 physicians.
9. Cactus was named by 54 physicians.
10. Apocynum and Chionanthus were each named by 51 physicians.
11. Thuja was named by 49 physicians.
12. Nux Vomica was named by 45 physicians.
13. Phytolacca was named by 39 physicians.
14. Digitalis was named by 37 physicians.
15. Hydrastis was named by 36 physicians.
16. Lobelia was named by 34 physicians.
17. Dioscorea was named by 30 physicians.
18. Ipecac was named by 28 physicians.
19. Rhus Tox was named by 27 physicians.
20. Baptisia was named by 25 physicians.
21. Collinsonia and Cratægus were each named by 23 physicians.
22. Asclepias was named by 21 physicians.
23. Apis was named by 19 physicians.
24. Passiflora was named by 17 physicians.
25. Cannabis, Viburnum and Hyoscyamus were each named by 14 physicians.
26. Iris was named by 13 physicians.
27. Caulophyllum and Staphisagria by 11 physicians.
28. Scutellaria, Podophyllum, Eryngium, Mangifera and Helonias were each named by 9 physicians.
29. Colchicum, Colocynth, Sticta and Jaborandi were each named by 8 physicians.
30. Sanguinaria, Ignatia, Berberis aq., Mitchella, Salix Nigra Aments and Strophanthus were each named by 7 physicians.
31. Chelidonium and Drosera were each named by 6 physicians.
32. Calendula, Ergot, Eupatorium, Grindelia, Matricaria and Tiger Lily were each named by 5 physicians.
33. Adonis, Aletris, Black Haw (*Viburnum prunifolium*), Cantharides, Cypripedium and Leptandra were each named by 4 physicians.
34. Aesculus, Arnica, Asthma weed (*Euphorbia pilulifera*), Avena, Cascara, Conium, Elaterium, Erigeron, Euphorbia, Ephrasia, Lycopus, Sambucus, Saw Palmetto, Solanum and Valerian were each named by 3 physicians.

35. Achillea, Amygdalus, Ampelopsis, Aralia, Capsella, Catalpa, Coca, Dulcamara, Eucalyptus, Euonymus, Gravel Root (*Eupatorium purpureum*), Hamamelis, Pinus Can., Senecio, Stillingia and Xanthoxylum, were each named by 2 physicians.
36. Chelone glabra, Cinnamon, Convallaria, Anthemis, Cubeba, Equisetum, Fragrant Sumach (*Eupatorium aromaticum*), Fucus, Gentian, Gossypium, Hydrangea, Lupulin, Matico, Melilotus, Oenanthe crocata, Oxydendron, Piper Methysticum, Plantago, Polymnia, Prunus, Quercus, Rheum, Senna, Serpentaria and Taraxacum were each named by 1 physician.
37. None of the following were named by any physician:

Actee alba,	Gaultheria,	Polygonum,
Agrimonia,	Guaiaicum,	Prunella,
Ailanthus,	Guarana,	Ptelea,
Alnus,	Helleborus,	Rhamnus Calif.,
Ambrosia,	Hepatica,	Rubus,
American Hemp	Horse Chestnut,	Rumex,
(Can. sat.),	Humulus,	Sarracenia,
Barosma,	Inula,	Senega,
Boletus,	Jacaranda,	Spikenard,
Cactus Flowers,	Jalap,	Spotted Spurge,
Ceanothus,	Juglans,	Stigmata Maydis,
Chimaphila,	Kalmia,	Stramonium,
Cinchona,	Kamala,	Swamp Milkweed,
Cnicus,	Lappa,	Trifolium,
Coffea,	Lycopodium,	Triticum,
Columbo,	Marrubium,	Urtica,
Cornus,	Myrica,	Ustilago,
Corydalis,	Nepeta,	Verbascum,
Damiana,	Panax,	White Snakeroot,
Epigaea,	Penthorum,	Xanthium Spinosum,
Epilobium,	Physostigma,	Yerba Santa,
Frasera,	Polemonium,	Zingiber.
Fraxinus,	Polystrichum,	
Galium,	Polygonatum,	

Comments on Table No. I.

The diagram accompanying (Fig. 1) presents at a glance the comparative importance, in their estimation, of the remedies named by the physicians taking part in this discussion. Scattered throughout the list are to be found drugs both official and non-official, in unexpected positions. For example, Echinacea, a non-official drug, heads the list, being named by 148 physicians, whilst in section 36, out of 25 drugs named by only one physician, 14 are official. This last class embraces the old standards Prunus, Rhubarb, Senna, Serpentaria, Cubeba, Gentian, Cinnamon and Taraxacum. In like manner, in the thirty-fifth section (next to the last) Coca appears in company with such seemingly unimportant drugs as Gravel Root (*Eupatorium purpureum*) and Lycopus.

These facts lead one to ponder over the mighty problem that confronts Pharmacopoeial Revision Committees, whose aim it is to serve the professions of medicine and pharmacy in the selecting of the remedial agents that shall be added to or discarded from the Pharmacopœia. In this connection it is evident, from other considerations than the data embraced in this one summary, that many drugs need be considered from several angles. For example, Cinnamon (No. 35) is very important, for it is not only used enormously in culinary directions, but yields a popular oil, which is also a flavor of merit. Oil of Cubeb is also largely employed as a substitute for the drug itself. Cocaine is enormously used by physicians who do not use Coca as a whole, whilst special preparations, such as the bitterless tincture of Cascara, are favorite forms of the thus much employed Rhamnus purshiana. Enormous amounts of Senna, Buchu, Gentian and other

old favorites, are employed by makers of popular medicines, even though now comparatively neglected by prescribing physicians. Drugs such as *Epilobium*, *Nepeta* and *Triticum* are very properly preferred in decoction and infusion. Such remedies as these must, therefore, be considered by reason of their respective merits and special uses.

It is, however, a fact that many drugs, once supreme, are now obsolete, excepting as lingering relics of Pharmacopœial inheritance. Indeed, some cumberers of the Pharmacopœia have been professionally neglected, almost from the traditional European past, whilst many remedies much used at the present date are conspicuous by reason of their absence from the Pharmacopœia.

Among the striking surprises of Table No. I is the great proportion of official drugs that are scarcely noticed at all, as shown by the fact, already stated, that

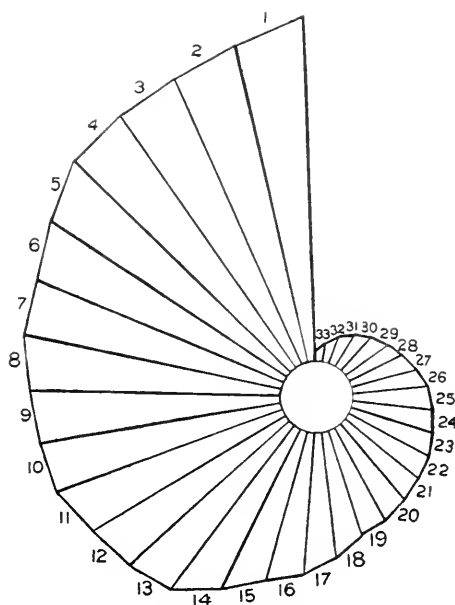


FIGURE II

out of twenty-five well-known drugs in the last class (No. 36) fourteen were official. Not less interesting, in this connection, is the fact that out of seventy drugs entirely ignored by every physician (No. 37) eighteen are yet official in the Pharmacopœia, some of them being very ancient Pharmacopœial stand-bys. A few of the causes for this condition have been mentioned, and others are recorded in *Part Three* of this paper.

PART II.—*Selection of Remedies by Eclectic Physicians.*

Since the opinion of no Eclectic physician was voiced in Table No. I, and since in the practice of Eclectic physicians many plant preparations and botanical drugs unrecognized in the U. S. P. have, for many decades, predominated, arose now the question as to how physicians of the Eclectic school of medicine would report

upon the same list of remedies. This led to the distribution among a like number of Eclectic physicians of the list that had previously been sent to physicians of other schools, with the request that the remedies be by them marked, in the order of their importance and use. The reports received from these Eclectic physicians were of increasing interest, especially when contrasted with those previously received from physicians of other schools, and as regards the similarity of the selection, there being a marked resemblance between the two classes, as shown by the following extract from the summing up made by us at that time:

"For the graphic illustration showing the relative importance of the vegetable remedies as used by physicians of the Eclectic school, see the accompanying diagram. (Fig. No. II.)³ The table following shows in a striking manner the comparative importance of each drug, as named by the physicians of the Eclectic school, and also by physicians of schools other than Eclectic."

TABLE NO. II.

Rank as named by Eclectic physicians			Rank in Table No. I, by physicians other than Eclectic.
1	Gelsemium	named by 105 Eclectic physicians....	5
2	Aconite	named by 96 Eclectic physicians....	2
3	Bryonia	named by 91 Eclectic physicians....	4
4	Macrotys	named by 90 Eclectic physicians....	3
5	Echinacea	named by 86 Eclectic physicians....	1
6	Belladonna	named by 69 Eclectic physicians....	8
7	Veratrum	named by 68 Eclectic physicians....	7
8	Nux Vomica	named by 66 Eclectic physicians....	12
9	Phytolacca	named by 59 Eclectic physicians....	13
10	Lobelia	named by 58 Eclectic physicians....	16
11	Pulsatilla	named by 57 Eclectic physicians....	7
12	Cactus	named by 49 Eclectic physicians....	9
13	Ipecac	named by 47 Eclectic physicians....	18
14	{ Apocynum	named by 41 Eclectic physicians....	10
	{ Chionanthus	named by 41 Eclectic physicians....	10
15	Rhus Tox.....	named by 29 Eclectic physicians....	19
16	Dioscorca	named by 25 Eclectic physicians....	17
17	Hydrastis	named by 23 Eclectic physicians....	15
18	Podophyllum	named by 16 Eclectic physicians....	28
19	Asclepias	named by 15 Eclectic physicians....	22
20	{ Collinsonia	named by 14 Eclectic physicians....	21
	{ Thuja	named by 14 Eclectic physicians....	11
21	Apis	named by 13 Eclectic physicians....	23
22	Ergot	named by 12 Eclectic physicians....	32
23	Passiflora	named by 11 Eclectic physicians....	24
24	{ Baptisia	named by 10 Eclectic physicians....	20
	{ Virburnum (Opulus)	named by 10 Eclectic physicians....	33
	{ Digitalis	named by 10 Eclectic physicians....	14
25	Crategus	named by 9 Eclectic physicians....	21
26	Jaborandi	named by 8 Eclectic physicians....	29
27	{ Avena	named by 7 Eclectic physicians....	34
	{ Colocynth	named by 7 Eclectic physicians....	29
	{ Ervugium	named by 7 Eclectic physicians....	28
	{ Sanguinaria	named by 7 Eclectic physicians....	30
28	Black Haw.....	named by 6 Eclectic physicians....	33

³For explanation of diagram, see page 1229.

TABLE No. II.—Continued.

29	Caulophyllum	named by	5 Eclectic physicians....	27
	Iris	named by	5 Eclectic physicians....	26
	Stillingia	named by	5 Eclectic physicians....	35
	Tiger Lily.....	named by	5 Eclectic physicians....	32
30	Berberis	named by	4 Eclectic physicians....	30
	Cannabis	named by	4 Eclectic physicians....	25
	Helonias	named by	4 Eclectic physicians....	28
	Drosera	named by	4 Eclectic physicians....	31
	Matricaria	named by	4 Eclectic physicians....	32
	Senecio	named by	4 Eclectic physicians....	35
31	Convallaria	named by	3 Eclectic physicians....	36
	Fragrant Sumach.....	named by	3 Eclectic physicians....	36
	Gossypium	named by	3 Eclectic physicians....	36
	Hydrangea	named by	3 Eclectic physicians....	36
	Mangifera	named by	3 Eclectic physicians....	28
	Rumex	named by	3 Eclectic physicians....	(unnamed)
	Salix Nigra.....	named by	3 Eclectic physicians....	30
	Scutellaria	named by	3 Eclectic physicians....	23
	Strophanthus	named by	3 Eclectic physicians....	30
	Nanthoxylum	named by	3 Eclectic physicians....	35
32	Agrimonia	named by	2 Eclectic physicians....	(unnamed)
	Metris.....	named by	2 Eclectic physicians....	33
	Cascara	named by	2 Eclectic physicians....	34
	Chelidonium	named by	2 Eclectic physicians....	31
	Cinnamon	named by	2 Eclectic physicians....	36
	Euphrasia	named by	2 Eclectic physicians....	34
	Gravel Root.....	named by	2 Eclectic physicians....	35
	Grindelia	named by	2 Eclectic physicians....	32
	Ignatia	named by	2 Eclectic physicians....	30
	Leptandra	named by	2 Eclectic physicians....	33
	Plantago	named by	2 Eclectic physicians....	33
	Triticum	named by	2 Eclectic physicians....	(unnamed)
33	Ailanthus	named by	1 Eclectic physician....	(unnamed)
	Amygdalus	named by	1 Eclectic physician....	35
	Anthemis	named by	1 Eclectic physician....	36
	Calendula	named by	1 Eclectic physician....	32
	Capsella	named by	1 Eclectic physician....	35
	Chimaphila	named by	1 Eclectic physician....	(unnamed)
	Colchicum	named by	1 Eclectic physician....	29
	Cypripedium	named by	1 Eclectic physician....	33
	Epigæa	named by	1 Eclectic physician....	(unnamed)
	Equisetum	named by	1 Eclectic physician....	36
	Eucalyptus	named by	1 Eclectic physician....	35
	Euonymus	named by	1 Eclectic physician....	35
	Euphorbia	named by	1 Eclectic physician....	34
	Fucus	named by	1 Eclectic physician....	36
	Gentian	named by	1 Eclectic physician....	36
	Geranium	named by	1 Eclectic physician....	(unnamed)
	Hammelis	named by	1 Eclectic physician....	35
	Inula	named by	1 Eclectic physician....	(unnamed)
	Marrubium	named by	1 Eclectic physician....	(unnamed)
	Melilotus	named by	1 Eclectic physician....	36
	Oenanthe	named by	1 Eclectic physician....	36
	Oxydendron	named by	1 Eclectic physician....	36
	Panax	named by	1 Eclectic physician....	(unnamed)
	Physostigma	named by	1 Eclectic physician....	(unnamed)
	Polymnia	named by	1 Eclectic physician....	36
	Ptelia	named by	1 Eclectic physician....	(unnamed)
	Rhamnus Cal.....	named by	1 Eclectic physician....	(unnamed)
	Staphisagria	named by	1 Eclectic physician....	27
	Sticta	named by	1 Eclectic physician....	29
	Stramonium	named by	1 Eclectic physician....	(unnamed)
	Taraxacum	named by	1 Eclectic physician....	36
	Zingiber	named by	1 Eclectic physician....	(unnamed)

Comments on Table No. II.

Comparison of the list of remedies as employed by Eclectic physicians, with the selection made by physicians of schools other than Eclectic.

Comparing the remedies selected by physicians of the Eclectic school with those presented in Table No. I, compiled from reports of physicians of schools other than Eclectic, we find as a rule a striking similarity in the remedies selected. The main remedies, as given in the first part of each list (compare the ranking numbers, given in the first and last columns of Table No. II) are substantially the same, and the remedies named in one list are, as a rule, included in the other, although the *position* varies somewhat. Aconite stands second in each list, while Bryonia and Macrotys change places, each being third in one list and fourth in the other. Gelsemium and Echinacea also change places in the two lists, Gelsemium heading the list of remedies named by the Eclectic physicians, and holding fifth place in the list of physicians other than Eclectic. Exactly the reverse is true of Echinacea, which *heads the list* of remedies named by physicians other than Eclectic, while it stands fifth in rank as named by Eclectic physicians. This fact is especially interesting when we consider that Echinacea was introduced to the profession by Eclectic physicians, was long employed and highly valued by them alone, and is still, by the general profession, credited as being an "Eclectic remedy." In other directions, marked deviations occur. For example, Podophyllum, which stands eighteenth in the Eclectic list, falls to 28 in the list of physicians other than Eclectic, while *Digitalis*, No. 24 in the Eclectic list, ranks as No. 14 in the other list. The low rank given to *Digitalis* by Eclectic physicians is probably due to the fact that the Eclectic school of medicine has made exceptional studies of more kindly remedies for heart control than the energetic *Digitalis*. Among the features that will be surprisingly interesting is the fact that *Hydrastis* stands No. 17 in the Eclectic list, and No. 15 in the companion list, although *Hydrastis* has for seventy-five years been a recognized "Eclectic remedy."

Remarkable and very interesting comparisons between these two lists may be made in many directions. For example, *Pulsatilla*, a drug introduced by the Homeopathic profession, and next popular in the Eclectic school, stands No. 11 in the Eclectic list and No. 7 in that of physicians of schools other than Eclectic. *Cactus*, another presumably Eclectic favorite, stands No. 12 in the Eclectic list and No. 9 in the companion list. However, comparative studies such as these can be made by whoever is interested in this direction, and no doubt many will examine the two lists here given with much interest.

The two studies, a brief resumé of which is here given, indicate that the practicing physicians of America now freely employ any remedial agent that appeals to them as being useful, regardless of either its origin, or the school affiliations of its introducers. Remedies introduced by the Eclectic profession during its seventy-five years' existence are now found in all the Pharmacopœias of the world, and are as freely employed by physicians of other schools as by Eclectics. Indeed, as shown by a comparison of the two lists herein presented, many old-time Pharmacopœial drugs have been abandoned by their former friends, and replaced by the newer Eclectic discoveries. As examples of such we would mention *Rumex*, *Triticum* and *Zingiber*, that were completely ignored by physicians of schools other than Eclectic, although these drugs have had Pharmacopœial records for all

time, and still hold a place among the official remedies named in the Pharmacopœia of 1900.

PART III.

Came finally a more cosmopolitan question, namely, whether *either* of the lists herein presented was fairly representative of the consumption of vegetable remedies by the entire body of general practitioners of the American medical profession. Having become thus involved in the study of this problem, the writer concluded that the question could be fairly answered only through the summarizing of reports from many thousands of physicians, scattered over the entire United States, and embracing all vegetable drugs of any importance whatever. Accordingly, a new list was made of vegetable drugs, embracing all those official in the Pharmacopœia, all the Eclectic vegetable drugs, and in addition the principal members of the Homeopathic materia medica, thus covering all the vegetable drugs employed to any extent by physicians in America, regardless of school or professional affiliation. Under cover of letter postage, and carrying each a return stamped (letter postage) envelope addressed to the writer of this paper, this list was sent to 30,000 physicians, located in every section of the United States, with a request reading as follows:

This page carries the names of all the vegetable drugs of the Pharmacopœia of the United States, 1900 edition, together with those used in the practice of physicians generally.

Place a double cross (xx) before remedies of great value in your practice. Example: xx *Aconite*.

Place a single cross (x) before all remedies less important. Example: x *Aesculus*.

Cross off all remedies not used at all in your practice. Example: ~~Achillea~~.

In choosing the physicians to whom this list was sent pains were taken to establish that each should be one whose college of graduation was known, and every physician contributing to the report filled out a blank giving both his college of graduation and the date of his graduation, but no other reference whatever was made to professional affiliations. At the time the summarizing of these reports was made more than 10,000 reports from practicing physicians had been received, to which it may be added that the reports subsequently received (too late to be officially recorded) are seemingly in accordance with those previously received and summarized.

In selecting the names of physicians to whom the list was sent an attempt was made to choose, as far as possible, only those engaged in the general practice of medicine, and directions were given that the list be compiled from the Medical Directory in such a manner as to include only a moderate number of physicians from each city. It was hoped that in this manner the general *country* practitioner might be prevented from being hopelessly outclassed by the large number of *specialists* in cities, who might not properly be included in a list of "practicing physicians."

The reports from this final list of drugs are of exceeding interest, as taken in connection with those previously mentioned. They are graphically presented in Fig. No. III, the drugs included being named in Table No. III.⁴

Owing to the large number of reports summarized in this diagram, and the

⁴For explanation of the diagram, see page 1229.

many drugs represented therein (more than two hundred in number), as well as to the fact that many of these were nearly identical in rank, it was impossible to make the divisions of the wheel represent *single* drugs. They were therefore divided by Professor Yowell into *groups*, or *classes*, beginning with the drug most

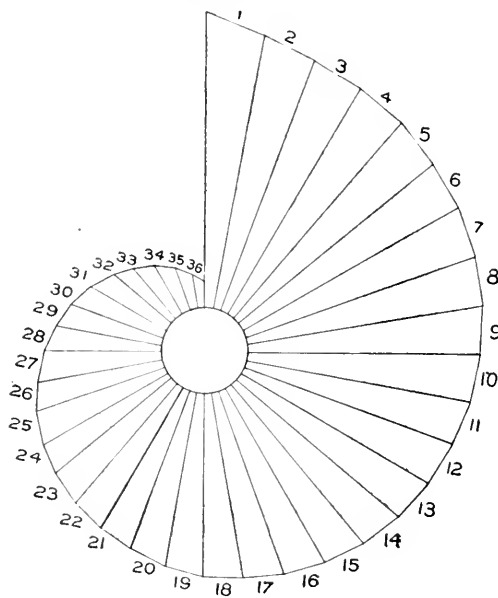


FIGURE — III

frequently named, the difference between these groups being greater than the difference between the successive members of a group.

TABLE No. III.

(The asterisk before a drug indicates that it is official in the 1900 edition of the U. S. P.)

1	Cactus, (Flowers and Stem).....	mentioned by 6239 physicians
2	{ *Hydrastis	mentioned by 5634 physicians
	{ *Aconite	mentioned by 5618 physicians
3	{ *Gelsemium	mentioned by 5540 physicians
	{ *Ipecac	mentioned by 5501 physicians
4	{ *Digitalis	mentioned by 5436 physicians
	{ *Ergot	mentioned by 5402 physicians
	{ *Belladonna	mentioned by 5343 physicians
5	{ *Nux Vomica.....	mentioned by 5246 physicians
	{ *Hyoscyamus	mentioned by 5229 physicians
6	{ Echinacea	mentioned by 5065 physicians
	{ *Viburnum prunifolium, (Black Haw)	mentioned by 4996 physicians
	{ *Valerian	mentioned by 4956 physicians
	{ *Podophyllum	mentioned by 4949 physicians
7	{ Thuja	mentioned by 4915 physicians
	{ *Opium	mentioned by 4915 physicians
	{ *Rhamnus purshiana, (Cascara).....	mentioned by 4870 physicians
	{ Bryonia	mentioned by 4853 physicians
	{ *Colchicum	mentioned by 4808 physicians
8	{ *Capsicum	mentioned by 4710 physicians
	{ *Lobelia	mentioned by 4596 physicians

TABLE NO. III—Continued.

8	Pulsatilla	mentioned by 4564 physicians
	*Apocynum	mentioned by 4548 physicians
	*Gentiana	mentioned by 4516 physicians
	*Sabal, (<i>Saw Palmetto</i>)	mentioned by 4481 physicians
	*Veratrum, (<i>V. viride</i>)	mentioned by 4480 physicians
9	*Hamamelis	mentioned by 4454 physicians
	*Phytolacca	mentioned by 4420 physicians
	*Viburnum, (<i>V. opulus</i>)	mentioned by 4377 physicians
	*Cimicifuga, (<i>Macrotys</i>)	mentioned by 4352 physicians
	Collinsonia	mentioned by 4282 physicians
10	*Cannabis Indica	mentioned by 4239 physicians
	Passiflora	mentioned by 4162 physicians
	Chionanthus	mentioned by 4154 physicians
	*Arica	mentioned by 4123 physicians
11	*Strophanthus	mentioned by 4077 physicians
	*Cinchona	mentioned by 4033 physicians
	*Sanguinaria	mentioned by 3955 physicians
12	Caulophyllum	mentioned by 3920 physicians
	*Cinnamon	mentioned by 3913 physicians
	Rhus Tox.	mentioned by 3858 physicians
	*Colocyth	mentioned by 3814 physicians
13	Gaultheria (<i>Oil of Gaultheria is official</i>)	mentioned by 3794 physicians
	Dioscorea	mentioned by 3775 physicians
	Baptisia	mentioned by 3753 physicians
	Asclepias	mentioned by 3747 physicians
14	*Eriodictyon, (<i>Yerba Santa</i>)	mentioned by 3650 physicians
	*Eucalyptus	mentioned by 3623 physicians
	Elaterium, (<i>Elaterinum is official</i>) ..	mentioned by 3579 physicians
15	Iris	mentioned by 3474 physicians
	*Mentha piperita	mentioned by 3464 physicians
	*Stillingia	mentioned by 3451 physicians
	*Senna	mentioned by 3441 physicians
	*Leptandra	mentioned by 3434 physicians
	*Carbo Ligni, (<i>Wood Charcoal</i>)	mentioned by 3390 physicians
	Helonias	mentioned by 3345 physicians
16	*Pilocarpus, (<i>Jaborandi</i>)	mentioned by 3340 physicians
	*Grindelia	mentioned by 3288 physicians
	*Gossypium	mentioned by 3236 physicians
	*Stramonium	mentioned by 3233 physicians
	Aletris	mentioned by 3224 physicians
17	Hydrangea	mentioned by 3151 physicians
	*Glycyrrhiza	mentioned by 3079 physicians
	*Cubeba	mentioned by 2978 physicians
	*Guaiacum	mentioned by 2966 physicians
18	*Taraxacum	mentioned by 2902 physicians
	*Santonica	mentioned by 2894 physicians
19	*Calendula	mentioned by 2761 physicians
	Crataegus	mentioned by 2747 physicians
	*Jalap	mentioned by 2739 physicians
	*Rheum	mentioned by 2726 physicians
	*Triticum	mentioned by 2717 physicians
	Damiana	mentioned by 2676 physicians
20	*Berberis	mentioned by 2607 physicians
	*Physostigma	mentioned by 2599 physicians
	*Sarsaparilla	mentioned by 2596 physicians
	*Xanthoxylum	mentioned by 2565 physicians
	Trifolium	mentioned by 2553 physicians
	Drosera	mentioned by 2515 physicians
	*Quassia	mentioned by 2495 physicians
	Rhus aromatica, (<i>Fragrant Sumach</i>) ..	mentioned by 2488 physicians
	Avena	mentioned by 2467 physicians

TABLE No. III—Continued.

	Scutellaria	mentioned by 2444 physicians
	Ignatia	mentioned by 2433 physicians
	*Scilla	mentioned by 2410 physicians
21	Erigeron, (<i>Oil of Erigeron</i> is Official)	mentioned by 2388 physicians
	*Coca	mentioned by 2387 physicians
	Adonis	mentioned by 2386 physicians
	*Conium	mentioned by 2379 physicians
	Eupatorium purpureum, (<i>Gravel Root</i>)	mentioned by 2352 physicians
	*Uva Ursi	mentioned by 2329 physicians
22	Coffea, (<i>Caffeine</i> is official)	mentioned by 2300 physicians
	*Lycopodium	mentioned by 2279 physicians
	*Convallaria	mentioned by 2262 physicians
	*Zingiber	mentioned by 2258 physicians
	*Geranium	mentioned by 2228 physicians
	*Senega	mentioned by 2201 physicians
	*Staphisagria	mentioned by 2145 physicians
	Chelidonium	mentioned by 2128 physicians
	*Euonymus	mentioned by 2086 physicians
	Eryngium	mentioned by 2076 physicians
	Pinus canadensis	mentioned by 2066 physicians
23	*Cypripedium	mentioned by 2062 physicians
	*Lupulin	mentioned by 2052 physicians
	*Columba	mentioned by 2052 physicians
	*Sassafras	mentioned by 2042 physicians
	*Eupatorium, (<i>E. perfoliatum</i>)	mentioned by 2031 physicians
	*Serpentaria	mentioned by 2019 physicians
	Rumex	mentioned by 1992 physicians
	Euphorbia pilulifera, (<i>Asthma Weed</i>)	mentioned by 1978 physicians
	Mitchella	mentioned by 1952 physicians
24	Salix Nigra Aments	mentioned by 1950 physicians
	Aesculus hippocastanum, (<i>Horse Chestnut</i>)	mentioned by 1924 physicians
	Aesculus, (<i>A. glabra</i>)	mentioned by 1894 physicians
25	*Sumbul	mentioned by 1850 physicians
	Sueta	mentioned by 1825 physicians
	Helleboms	mentioned by 1742 physicians
26	Juglans	mentioned by 1700 physicians
	Senecio	mentioned by 1692 physicians
	*Aspidium	mentioned by 1681 physicians
	*Humulus	mentioned by 1654 physicians
	*Spigelia	mentioned by 1654 physicians
	Amygdalus	mentioned by 1596 physicians
27	Caryophyllus	mentioned by 1528 physicians
	Lilium tigrinum, (<i>Tiger Lily</i>)	mentioned by 1506 physicians
	*Zea, (<i>Stigmata Maydis</i>)	mentioned by 1504 physicians
	*Cardamomum	mentioned by 1478 physicians
	*Prunus	mentioned by 1426 physicians
	Chimaphila	mentioned by 1422 physicians
	Piper methy-sticum	mentioned by 1409 physicians
	Dulcamara	mentioned by 1389 physicians
	*Mentha viridis	mentioned by 1315 physicians
	Buchu, (<i>Barosma</i>)	mentioned by 1316 physicians
28	Euphrasia	mentioned by 1293 physicians
	Euphorbia, (<i>E. corollata</i>)	mentioned by 1280 physicians
	Lycopus	mentioned by 1268 physicians
	Aurantii Am. Cort.	mentioned by 1263 physicians
	Lactucarium	mentioned by 1219 physicians
29	*Hamatoxylon	mentioned by 1201 physicians
	Sambucus	mentioned by 1145 physicians
	*Anisum	mentioned by 1140 physicians
	*Scoparius	mentioned by 1102 physicians
	*Matricaria	mentioned by 1096 physicians
	Hepatica	mentioned by 1077 physicians

TABLE No. III—Continued.

30	Corydalis	mentioned by	1040 physicians
	*Lappa	mentioned by	1000 physicians
	Mangifera	mentioned by	999 physicians
	*Quercus	mentioned by	992 physicians
	Plantago	mentioned by	986 physicians
	Rhamnus calif.	mentioned by	952 physicians
	*Galla	mentioned by	951 physicians
31	*Guarana	mentioned by	940 physicians
	Solanum	mentioned by	928 physicians
	Aralia racemosa, (<i>Spikenard</i>)	mentioned by	888 physicians
	*Rhus glabra	mentioned by	859 physicians
	Verbascum	mentioned by	850 physicians
	*Anthemis	mentioned by	844 physicians
	Capsella	mentioned by	844 physicians
	*Krameria	mentioned by	825 physicians
	Oxydendron	mentioned by	813 physicians
	Urtica	mentioned by	810 physicians
	Oenanthe crocata	mentioned by	806 physicians
	Ailanthus	mentioned by	802 physicians
	Ustilago	mentioned by	802 physicians
	Alnus	mentioned by	800 physicians
	Myrica	mentioned by	795 physicians
	Kalmia	mentioned by	790 physicians
	Melilotus	mentioned by	779 physicians
	*Pepo	mentioned by	778 physicians
	*Sabina	mentioned by	777 physicians
32	Polymnia	mentioned by	775 physicians
	Equisetum	mentioned by	772 physicians
	*Calamus	mentioned by	757 physicians
	*Aralia spinosa, (<i>Aralia</i>)	mentioned by	725 physicians
	Achillea	mentioned by	717 physicians
	*Cassia fistula	mentioned by	715 physicians
	Cornus	mentioned by	713 physicians
	*Marrubium	mentioned by	706 physicians
	Agrimonia	mentioned by	684 physicians
	Fucus	mentioned by	633 physicians
	*Prunum	mentioned by	626 physicians
	Ambrosia	mentioned by	625 physicians
	Epilobium	mentioned by	621 physicians
	Fraxinus	mentioned by	621 physicians
33	Egipaea	mentioned by	609 physicians
	*Granatum	mentioned by	599 physicians
	*Paeonia	mentioned by	595 physicians
	*Mullein	mentioned by	592 physicians
	*Hedeoma	mentioned by	592 physicians
	Eupatorium aromaticum, (<i>White Snakeroot</i>)	mentioned by	582 physicians
	*Myristica	mentioned by	581 physicians
	*Pimenta	mentioned by	531 physicians
	Boletus	mentioned by	530 physicians
	*Mezereum	mentioned by	528 physicians
	*Foeniculum	mentioned by	520 physicians
	*Matico	mentioned by	516 physicians
	*Rhus	mentioned by	513 physicians
	Kamala	mentioned by	499 physicians
	*Coriandrum	mentioned by	495 physicians
	Galium	mentioned by	493 physicians
	Polygonum	mentioned by	492 physicians
	Asclepias incarnata, (<i>Swamp Milkweed</i>)	mentioned by	488 physicians

34	*Frangula	mentioned by	479 physicians
	Actæa alba	mentioned by	474 physicians
	Ceanothus	mentioned by	470 physicians
	*Nepeta	mentioned by	455 physicians
	Ptelea	mentioned by	444 physicians
	Anemopsis	mentioned by	425 physicians
	*Salvia	mentioned by	420 physicians
	Inula	mentioned by	418 physicians
	Panax	mentioned by	408 physicians
	Euphorbia hypericifolia, (<i>Spotted</i> <i>Spurge</i>)	mentioned by	406 physicians
	Prunella	mentioned by	375 physicians
	Chelone	mentioned by	369 physicians
	Polytrichum	mentioned by	366 physicians
	Jacaranda	mentioned by	364 physicians
35	*Carum	mentioned by	348 physicians
	Catalpa	mentioned by	332 physicians
	Penthorum	mentioned by	331 physicians
	*Cusso	mentioned by	320 physicians
	Xanthium	mentioned by	316 physicians
	*Scopola	mentioned by	298 physicians
	*Chirata	mentioned by	267 physicians
36	*Quillaja	mentioned by	253 physicians
	Polygonatum	mentioned by	246 physicians
	Sarracenia	mentioned by	244 physicians
	Polemonium	mentioned by	221 physicians
	Fraseria	mentioned by	213 physicians
	Cnicus	mentioned by	145 physicians

Comments on Table III.

Many surprises appear in Table III, none being greater to the writer than that which came in the name of the drug heading the list, which might rationally have been expected to occupy a position far down the line. Instead, this drug, in the opinion of Professor Yowell, who devised the diagram (see note page 1229), stands so far above the others as to form a class to itself.

Another surprise to the writer is, that the exclusively American drug, Hydrastis, precedes Aconite, a great favorite among physicians of all schools of medicine, that has for over a century enjoyed a world-wide reputation. Likewise, just how such a drug as Viburnum prunifolium comes to rank in Class 5, and to precede the world-known Podophyllum, of the same class, is inexplicable. The same remark might be made concerning many other drugs, in other classes.

It is of interest to note that Capsicum and Lobelia, two Thomsonian sheet anchors, form a class (No. 7) to themselves, which could not have occurred through their selection by Thomsonian physicians, these being few in proportion to the physicians of other schools.

It will be observed that while Pharmacopœial drugs dominate the first twenty-three classes, this is also true of Classes 33 and 35, while the last class (No. 36) is composed wholly of unofficial drugs. In this connection it should be stated that the printed list submitted to physicians⁵ had no mark to designate drugs as Pharmacopœial or otherwise, the name only of the drug appearing.

We must not overlook the fact previously mentioned (p. 1230) that many drugs seldom employed as simples (as Santonica) yield constituents that are freely em-

⁵This list accompanies our paper.

ployed in medicine under distinctive names, whilst others, seemingly little used, are employed largely in the form of unofficial pharmaceutical preparations of which these drugs form a part. This phase of the subject has, however, been already discussed.

In considering the subject broadly, the writer is led to the opinion that the majority of physicians are guided in their uses of remedies by their own judgment, based upon clinical observation and professional necessity. It is evident that physicians in actual practice generally prescribe as they see fit, regardless of whether a drug or a preparation is mentioned in the Pharmacopœia or has been recommended by their therapeutic instructors, or whether it be advocated or not by the leaders now in authoritative positions.

The writer will freely confess that a study such as this leads to distractive confusion and a shattering of ideals. It reminds him of an experience some years ago when, hoping to curtail the number of cathartic remedies that it was his duty to prepare for physicians, he ventured to send a list of the best known cathartics to a selected number of physicians who, by reason of their practice and positions, might be considered representative, with a request that they cross off from the list each cathartic that in their opinion could be excluded from the physician's armamentarium. To his surprise, the reports indicated not only the advisability of retaining the entire list, but the increasing of it by several additions.

Unquestionably, many physicians of prominence do not use remedies that with others are favorites, and vice versa. Possibly, also, the reports here summarized are dominated by physicians versed in the use of vegetable remedies, those neglecting them failing to reply. In passing it may be said that one physician crossed off every item but Opium, with the comment that no other remedy was necessary!

In it all the writer feels under many obligations to the many physicians who have collaborated with him in this work, and who, without exception, took great pains to be courteous, while many were even enthusiastic. Many hundreds of letters of great interest came to him in connection with this list, but these necessarily cannot be even commented on in these pages.

This paper may well close with the remark that, in the writer's opinion, the Pharmacopœial Committee is confronted, in drug selection, with a perplexing problem. Whatever may be their action, criticism is certain in some directions because of remedies *included*, whilst in other directions, certain of the remedies *excluded* will be made subjects of adverse comment. Drugs that with many physicians are favorites will surely be omitted from the 1910 revision of the U. S. P. whilst others little used by some practicing physicians will certainly be retained. Be this as it may, it is to be hoped that this study, with its many striking features, will lead those inclined to harsh criticism and strictures to a more liberal comprehension of the materia medica problem as a whole, and to a kindlier view, when the new edition of the Pharmacopœia appears, in case they feel that blunders of either omission or commission have been made. At any rate, in case this statistical study be placed on record, it will, as time goes by, be of interest to those desirous of commenting upon the drug records of the past.

THE U. S. P. IN A RETAIL PHARMACY.

WALTER H. VARNUM.

The subject which I intend to present to you in this paper is one that is not only of great importance to a retail pharmacist but if not taken in hand at once, is going to be very detrimental to the profession. It is not the use of the Pharmacopoeia that is the trouble with the average druggist, but the lack of it. It is very unfortunate that it is necessary to treat of this subject at all, but owing to a large number of unethical proprietors, the use of the Pharmacopoeia is growing less every day.

There are several reasons for this, primarily "lack of habit." A druggist does more different kinds of work by routine than any other professional man. The first few years he is in a store he is learning or getting the habit. Which ever way this may be, good or bad, it will stick to him in after years.

Increased competition and a large stock of side lines, have caused proprietors to give less time to the pharmaceutical end of their store and more time to the front end or sundry department. They have changed from the old and established methods of making U. S. P. preparations from the crude drug, by percolation, maceration, or solution, to the new and time-saving plan of using the fluidextracts as a base for tinctures, spirits, infusions, syrups, etc. These men soon lose the habit and their clerks who are the future proprietors soon follow in the same rut. This is the cause of so many preparations being found by the pure food inspector to be the wrong strength. I believe that 99 out of 100 samples picked up by him, "weighed in the balance and found wanting" are either made from fluidextracts, or by men accustomed to this practice.

A druggist that is so unethical as to fill his stock bottles with this grade of goods will not take the time to test them but will take for granted that the formula on the bottle is correct. These men have lost the habit and are so unaccustomed to using the Pharmacopoeia that when it is necessary to use it they have become careless and make a bad job of it, rather than turning out a nice clear, full strength preparation. These men do not know that there are tests and assays given there for their special benefit. All preparations whether made from fluidextracts or crude drugs should be tested, if there is any possible way to do so, before dispensing.

To show how easy a mistake is liable to occur, we will take, for instance Fluid-extract Digitalis. This is the formula on the bottle for making the tincture.

Fld. ext. Digitalis.....	1 3/5 fl. oz.
Alcohol q. s.....	16 fl. oz.

The graduates that are found in a drug store are not marked in fifth ounces so the careless druggist, in order to save time, will not measure it down to the minimum, but will be contented to guess at 3 1/5 oz., and as a result his tincture is not U. S. P. strength. Not only is the strength wrong but the druggist will label it "U. S. P." No druggist has a right to label any preparation U. S. P. that is not made according to the direction in the United States Pharmacopoeia. The

only druggists in the United States that assay and standardize their preparations are the ones that really make U. S. P. preparations.

Some of the assays and tests I believe are a little beyond some of the druggists. While college graduates are growing in number, there are still a good many of the profession that received their early education where scientific chemistry was not known and unless they have studied up on it since, they are not prepared to carry out the directions of the U. S. P. This however, should be no excuse because it is possible to procure clerks that are capable, and apparatus that is necessary to conduct any of these tests. The simpler these tests can be made, the better for everybody concerned.

I do not want you to think that this is the case everywhere, there is a bright side to pharmacy if we will only grasp it. The future is just what you men wish to make it. The membership of the A. Ph. A. is large enough to turn the tide one way or the other. One thing above all others, use your Pharmacopœia and show your apprentice how to use it.

KEEPING UP ASSOCIATION MEMBERSHIP.

Apparently the only way to develop a big membership, and to keep it big, is by means of traveling organizers. Out in Iowa, as we reported last month, the membership of the State Association has been increased from 400 to 1200 through a county organization system, supplemented by the earnest efforts of a paid organizer (a woman, by the way) whose whole time has been devoted to the task for a year or more. Two or three other State Associations have practiced the same methods with success.

Such work, however, must apparently be kept up indefatigably. In Ohio, for instance, where the membership had grown in 1911 up to the surprising figure of 1481, interest began to slump as soon as the organizer resigned from his task, and at the recent annual meeting it was found that reports from the county organizations were far too infrequent in number and much too indifferent in character. The last organization campaign cost \$1786, and only brought in \$1522, but even at that it was to be considered a success since it added greatly to the strength of the body.—*Bulletin of Pharmacy*.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

THE RELATION OF DRUG STANDARIZATION TO PHARMACEUTICAL EDUCATION AND LEGISLATION.

F. E. STEWART, PH, G., M. D.

My attention was first called to the unsatisfactory condition of the materia medica supply business in 1880. Having at that time introduced rectal gelatin suppository capsules and desiccated blood, and contributed papers describing them to medical and pharmaceutical journals, I was brought in contact with the so-called new remedy business. When these products were placed on the market by a large manufacturing house and my literature distributed to the profession, I was warned by my prominent medical friends of the dangers of "commercialism." I found that if their opinions were correct such a thing as a profession of pharmacy supported by materia medica commerce would be impossible. As a graduate of the Philadelphia College of Pharmacy I was not willing to accept their opinion, and therefore took up the question of the relation of pharmacy to medicine in self-defense.

During the thirty years that have since elapsed I have made the subject one of continual study and investigation. As chairman of committees of the American Pharmaceutical Association, pharmaceutical author, editor, and teacher, physician and social worker, and expert for large pharmaceutical manufacturing houses, I have enjoyed unusual privileges and experiences of a most practical nature. The facts that I shall present in this paper are therefore not based on idealist theories but consists of the expression of thoughts and opinions gained by continuous personal contact with the difficulties which we are all striving to overcome.

In spite of what has been done in the past, we still find today a wide-spread protest against the existing methods of carrying on and increasing the drug business. Remedial legislation is being sought by associations, societies and individuals who have the interests of humanity at heart and who are determined that the public health shall not be exploited for the benefit of individual greed, or in condoning individual inefficiency or ignorance.

A noted political economist and professor in one of our eastern universities, who is chairman of an important committee in charge of a bill now before Congress having as its object the regulation of matters affecting the public health, in

answer to my question why he considered the drug business a menace to the health of the nation, advanced the following argument:

"Social workers throughout the country are engaged in an organized campaign to stamp out tuberculosis. One of the obstacles in the way of the campaign is the drug business. Druggists and manufacturers are engaged in pushing cough medicines and consumption cures. People suffering with incipient phthisis purchase these remedies because they are advertised and recommended for coughs which are, in many instances, symptoms of tuberculosis. While they are engaged in combatting a symptom with medicines which from the very nature of the disease cannot reach the cause, valuable time is lost, and the patients, capable of cure if properly treated in the beginning, become incurable because of this delay. Our campaign is one of education and legislation to remove the causes of consumption and to institute methods of proper sanitation and treatment—treatment in which drugs have little or no part. It is admitted by physicians expert in treating tuberculosis that drugs are for the most part worse than useless in combatting this disease. In this campaign we are opposed by manufacturers and dealers in drugs who care more for money than for human life. I assured this gentleman that thousands of people in the drug business are thoroughly in harmony with social workers in their campaign against tuberculosis and equally opposed to indiscriminate drugging. Yet we are all familiar with cases of incipient phthisis treated by druggists with cough remedies and there is enough of this malpractice going on to justify the criticism.

A Washington official engaged in promoting national legislation for regulating the sale of narcotic and habit-forming drugs, expressed in a recent conversation similar views regarding the attitude of the drug business toward legislation against drug abuses. He stated that certain powerful drug interests employ lawyers of ability as lobbyists who spend their time at Washington and at the state capitals skillfully opposing such legislation.

These lobbyists claim to represent the entire drug trade of the country; and, as the national and state pharmaceutical associations do not repudiate the claim, it is not surprising that those who are promoting bills for the protection of the public health are under the impression that the drug business as such is opposed to all legislation in any way affecting its commercial interests.

Those of us who attended the annual meeting of the Pennsylvania Pharmaceutical Association this year will remember the bitter opposition against the proposed pharmacy bill. Chairman Wallace, the champion of the bill, deserves the thanks of all lovers of true pharmacy for his successful efforts in its behalf. The debate lasted most of the day and far into the night and the friends of the bill won by a vote of 40 to 30.

It must be admitted that there are many persons in the drug business who are opposed to all laws which restrict the sale of drugs except such as are devised to give them a monopoly. They think existing restrictions very unfair and view with alarm bills now before Congress containing further restrictions. These bills seem to them very radical, but when one considers the decision of the Supreme Court of the United States in the case of *Worden vs. California Fig Syrup Co.* (No. 35, October term, 1902), it will be found that in the opinion of the highest legal

tribunal in the land restrictions should be imposed far more stringent than any prepared in the bills referred to. I particularly attended to the following paragraph in the decision:

"Most, if not all, the States of the Union have enactments forbidding and making penal the practice of medicine by persons who have not gone through a course of appropriate study and obtained a license from a board of examiners; and there is similar legislation in respect to pharmacists. And it would seem to be inconsistent to defeat such salutary laws, if medical preparations, often and usually containing powerful and poisonous drugs, are permitted to be widely advertised and sold to all who are willing to purchase. Laws might properly be passed limiting and controlling such traffic by restraining retail dealers from selling such medicinal preparations, except when prescribed by regular medical practitioners."

What would be the effect of such additional legislation as suggested in this opinion? It would place the practice of medicine and pharmacy under the joint control of the medical and pharmaceutical professions, where it properly belongs; it would put an end to lying medical advertising without a special bill for the purpose; it would limit the evils of self-medication and place the question of domestic medicine on a professional basis; it would put an end to the "Great American Fraud" and raise pharmacy to its proper place as a branch of medical practice.

The object for which the pharmaceutical profession is supposed to exist is to cooperate with the medical profession in standardizing the materia medica and in rendering it fit for the use of physicians in treating the sick, but it is not the function of the pharmacist to prescribe or recommend medicine.

This fact is recognized in the chapter of the medical code of ethics dealing with the duties of the profession to the public: Section 4. "By legitimate patronage, physicians should recognize and promote the profession of pharmacy; but any pharmacist, unless he is qualified as a physician, who assumes to prescribe for the sick, should be denied such countenance and support. Moreover, whenever a druggist or pharmacist dispenses deteriorated or adulterated drugs, or substitutes one remedy for another designated in a prescription, he thereby forfeits all claims to the favorable consideration of the public and physicians."

If pharmacy is thus to become practically part of the medical profession, it is important for the pharmacist to consider and practice the professional ideals of medicine.

Medicine is one of the liberal professions. In defining what is meant by a liberal profession, the *British Medical Journal* for April 6, 1912, says: "Why have divinity, law and physics been for so many centuries grouped together as 'liberal professions' in contradistinction to other associations? Doubtless in the first place, because for admission to them it is necessary to have been initiated to some extent in the study of what are called the liberal arts; one cannot, as it were, become evolved into a clergyman, a lawyer or a medical practitioner by the simple process of apprenticeship. But there is a further common stamp which marks off members of the professions from commercial pursuits of whatever kind; they are each bound by self-imposed laws, generally accepted, although they may be unwritten, by which their practice is regulated. That is what constitutes the bond of union, which Bishop Boyd Carpenter * * * called the free-masonry of the three great professions. They all place professional honor above

the struggle to acquire wealth, which is the aim of commerce, and they place on their members in their professional dealings restrictions which have no place in trade. The needs of mankind are considered fair subjects of exploitation by commerce; a 'corner' in some commodity, even if it be a necessary of life, is considered a clever stroke of business."

According to the code of medical ethics, a profession has for its prime object the service it can render humanity; reward or financial gain should be a subordinate consideration. In choosing the medical profession, an individual assumes an obligation to conduct himself in accord with its ideals.

There can be little doubt that both the pharmaceutical and medical professions could elevate themselves in the opinion of the general public by a strict adherence to ethical dealings, and that to their financial and social advantage. With the lack of suitable legislation and the failure to enforce laws already in existence, the pharmaceutical profession has developed an alarming tendency to degenerate into the commercial business of nostrum vending and quack doctoring in which the expert pharmacist is far excelled by the better storekeeper and skillful impostor.

A study of conditions as they are discloses anything but an ideal, or even sensible state of affairs.

First, we have public self-diagnosis and treatment, which includes purchases of standard drugs from the druggist for this purpose without a physician's prescription.

Second, we have self-diagnosis by means of instructions contained in patent medicine advertisements and self-treatment by the patent medicine which recommends itself to the judgment of the individual who has made his own diagnosis.

Third, we have diagnosis by the druggist and treatment by means of standard drugs, his own mixtures, or patent medicines.

Fourth, we have continued public self-medication by means of repeated filling of doctors' prescriptions.

Fifth, we have substitutes or use of deteriorated drugs by the pharmacist in compounding physicians' prescriptions.

The methods for combatting this condition lies in (1) the education of the public; (2) the restoration of the professions of medicine and pharmacy to their proper dignity and place, and (3) the standardization of the entire materia medica.

What is drug standardization?

"Drug standardization consists in fixing a nomenclature for drugs and preparations; it consists of determining methods for insuring uniformity in composition and physiological action and therapeutic effects; it consists in adjusting finished products to fixed standards and keeping them there for a sufficient length of time to permit their proper application as therapeutic agents; it consists in reducing this knowledge to law and embodying it in system and then teaching it in medical and pharmaceutical colleges, universities and journals."

Cooperation between the medical and pharmaceutical profession is necessary to do this work of standardization. Once in ten years the representatives of the two professions assemble in congress at Washington and appoint a committee to

do the work. The assembly is known as the United States Pharmaceutical Convention, and the committee is called the Committee of Revision.

Before the advent of the Pure Food and Drugs Act of June 30, 1906, compliance with the standards of the U. S. Pharmacopoeia was purely voluntary. This legislation made the Pharmacopoeia the "law of the land" so far as interstate commerce is concerned. Most of the states have followed the National Government in this legislation for the establishment of standards, and as a result pharmacy is assuming an importance never before attained in this country.

I do not believe that either of the professions realize what a weapon of offense and defense they possess in drug standardization in the warfare against pretense and error.

Take, for example, the results that might be accomplished by adopting a plan for the proper classification and standardization of every alleged new remedy as soon as introduced.

The first step in standardization consists in fixing a nomenclature for the new materia medica product under consideration. At the present time this is fixed by the commercial introducer, who gives the product a name, registers the name as a trade-mark, and claims it as his personal property, thus creating a system of monopoly.

The medical and pharmaceutical professions are not called upon to endorse any such system of monopoly. It is contrary to ethics and a violation of the best traditions of the profession handed down from the time of Hippocrates.

The remedy is very simple and is already being applied by the medical and pharmaceutical text-books. It consists in giving each new product a generic name and using the so-called trade-name as a synonym. By what law can the introducer of a new product prevent the medical and pharmaceutical professions and manufacturers generally from adopting this plan?

The second step in standardization consists in fixing tests for identity, character, quality and strength. This ought to be the function of the central government at Washington, under the Pure Food and Drugs Act.

The third and final step consists in ascertaining the true therapeutic value of the product. Therapeutic verdicts require the cooperative work of experts in chemistry, pharmacy, pharmacodynamics, and therapy-dynamics as well as clinicians. The drug must be prepared in suitable forms—this requires experts in pharmacy. It must be examined by chemists to verify the claims made for chemical composition. Chemists and experts in pharmacodynamics are required for its chemical and pharmacodynamic standardization. Chemical, physiological and pathological knowledge is required for the study of its effects on healthy and diseased tissues. If a new plant is undergoing examination, the services of experts in pharmacognosy are also required.

To aid the clinician in carrying on the work of investigation, convenience requires that the knowledge thus evolved shall be properly classified and sent to physicians engaged in hospital and private practice, in the form of Working Bulletins. I suggested the Working Bulletin System in 1881. By this plan it becomes the function of all concerned to report the results of observations and verifications in the medical and pharmaceutical journals. After passing the cen-

sorship of the press, the information thus obtained is collected, classified, and published in subsequent editions of the bulletins.

These bulletins, when collected and bound, would furnish very comprehensive literature concerning the new products submitted to this collective investigation.

Therapeutic standardization of the newer materia medica by means of the Working Bulletin System thus promotes progress in the science of the materia medica and in the useful arts upon which that science is dependent.

It is evident that such a system of drug standardization applied promptly to each new materia medica product introduced to commerce would soon put an end to imposition, nostrum production and monopoly. It is also evident that it is not safe for physicians to freely use new materia medica products introduced by advertising unless they are first submitted to impartial tests by competent observers.

I first advocated a national bureau at Washington, and an investigation of the materia medica of the world under governmental auspices. This plan was favored by the Smithsonian Institute and the medical departments of the Army, Navy and Marine Hospital Service, also the American Medical Association, but opposed by powerful commercial interests. Then I advocated a national bureau of materia medica. This was endorsed by the Journal of the American Medical Association. Shortly afterward I took part in organizing the National Bureau of Medicines and Foods and the National Pharmacy Company to support it. This plan received extensive professional endorsement.

A plan was suggested to reorganize the bureau under the joint control of the American Medical Association and the American Pharmaceutical Association, and the joint committee reported favorably, but again commercial interests interfered. Then the Council on Pharmacy and Chemistry was organized, and adopted part of the plan.

The Council did not see fit to make use of the Working Bulletin System, but it has been taken up by the scientific departments of manufacturing houses, with the approval of the profession.

While an ardent admirer of the work of the Council, I still believe that the working bulletin system, carried on by the Council, or by a strong board of control, working in cooperation with the Council, or by a government bureau, such, for example, as the Bureau of Hygiene, would prove a valuable addition to the means by which the profession is enabled to obtain therapeutic results.

Summary: Progress in materia medica science is dependent upon materia medica standardization by the cooperative work of the medical and pharmaceutical professions. As the result of that work, we already have the pharmacopocia and scientific literature relating to materia medica, pharmacy, and drug therapeutics.

Progress in drug standardization is dependent upon the researches and discoveries of persons engaged in the practice of the pharmacologic arts, viz., pharmacognosy, or the art of identifying and selecting drugs; pharmacy, or the art of preparing, preserving, compounding and dispensing; pharmacodynamics, or the art of determining their effects on healthy tissues and of applying the knowledge to the standardization of drugs by physiologic testing; and therapy-dynamics, or the art of determining the effects of drugs on diseased tissues and applying drugs as medicines in the treatment of the sick.

The only way in which new *materia medica* products can be standardized and properly introduced to science is by the cooperative investigation and researches of many chemists, pharmacists, pharmacologists and clinicians, working under different conditions of environment, in all parts of the world, comparing and verifying each other's observations, impartially discussing results, classifying and publishing the same in the forms of science, and teaching this knowledge to the medical and pharmaceutical professions so that it may be freely used for humanitarian purposes. This work cannot be successfully accomplished under a system of commercial monopoly by secret processes, product patents, or commercially controlled names.

The knowledge of drugs, to be classed as a science, must be reduced to law, embodied in system, and protected by a stable nomenclature. The name of that science, advocated by the author of this paper since 1881, should be Pharmacology. This name is now so recognized by the National Committee representing the boards and colleges of pharmacy in its pharmaceutical syllabus.

The professions of medicine and pharmacy are mutually dependent, and both are the servants of the public. The public demands that the physician shall take care of the sick, and the pharmacist supply the medicine for that purpose. Unfortunately for the peace and harmony that should be maintained between the two professions, the public also demands the privilege of self-diagnosis and self-treatment, and the pharmaceutical profession is expected by the self-medicating public to supply the medicine for that purpose. Consequently, there has always been more or less friction between the two professions, and always will be, until both are willing to consider this question of domestic practice in a rational manner and come to a dignified compromise.

While the two professions have been fighting between themselves like the dogs of the fable, the nostrum manufacturers have improved the opportunity to run away with the bone.

It is the duty of these professions to free the *materia medica* from commercial control. It is their duty to unite for the standardization of the entire *materia medica*. The public has intrusted this work to their hands, yet they have not only neglected their duty in this regard, but have become recalcitrant. The parable of the talents applies to the situation. Beware lest the fate of the servant who hid his talent in the earth overtake us for this neglect and repugnance.

This is by no means an idle threat. Political economists, sociologists, philanthropists, sanitarians and others have become cognizant of the situation and are closing in their ranks for stronger organization. They are behind the bills in Congress, and sooner or later legislation will be effected for the protection of the public. Shall we, as professions, take part in guiding and shaping this legislation, so that it may accomplish its purpose speedily and harmoniously? Or shall we sit back complacently and permit outsiders to do the work that we ought to do, to our lasting shame and disgrace?

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

SOME SLIGHT CHANGES WHICH LEAD TO PERFECTION.

S. K. SASS.

Many pharmacists, if unsuccessful in their first attempt to make some preparation according to the formula in one of the official books, will freely and unfavorably criticize the book, the constructor of the formula, or the Committee of Revision.

A little thought about the perplexing formula, patience and some experimental work with the expenditure of little money are the only things necessary to find out that the formula in most cases is good or nearly so.

We must remember that we do not all work under the same conditions—that atmospheric and climatic changes play an important role in some cases—that the change of seasons acts as another joker.

Aromatic Elixir. Using Magnesium Carbonate in place of Purified Talc gives better results. 5 gm. is sufficient to prepare 1000 cc. of perfectly clear elixir.

Elixir of the Phosphates of Iron, Quinine and Strychnine. This important elixir is not as difficult to prepare as it at first appears. If prepared as suggested by Mr. Dunn, with a slight change in the directions a most satisfactory preparation which will keep for a long time is obtained. The formula and directions in the Pharmacopoea should be changed to read as follows:

Soluble Ferric Phosphate.....	17.500 gm.
Quinine	8.750 gm.
Strychnine	0.275 gm.
Phosphoric Acid	2.000 cc.
Ammonium Carbonate	5.000 gm.
Alcohol	60.000 cc.
Acetic Acid	16.000 cc.
Distilled Water	
Aromatic Elixir each, a sufficient quantity	
To make.....	1000 cc.

Dissolve the Quinine and Strychnine in the Alcohol, then add the Phosphoric Acid and *three hundred and fifty cubic centimeters* of Aromatic Elixir. Add the Acetic Acid to the Ammonium Carbonate, contained in a suitable vessel, and when solution is complete add enough Distilled Water to make the product measure *fifty cubic centimeters*. Mix the solution of Ammonium Acetate with the solution of the alkaloids and add enough Aromatic Elixir to make the liquid measure *eight hundred and eighty cubic centimeters*. Dissolve the Ferric Phosphate in *fifty cubic centimeters* of Distilled Water and add enough Aromatic

Elixir to make the product measure *one hundred and twenty cubic centimeters*. Finally mix the two solutions and filter.

Note: If precipitate will appear, agitate until dissolved. Keep in a bottle covered with dark paper and well corked. This preparation will slightly darken with age, but its efficiency is not affected.

Syrup of Hypophosphites. When made adhering strictly to the formula and directions of the U. S. P. this preparation is a failure. It will not keep for any length of time. When finished it is not of the U. S. P. strength, as some of the hypophosphites are precipitated and left in the filter.

After some experimentation I came to the conclusion that a little change in the formula, which does not affect the active principles is necessary. Therefore I suggest the following as entirely satisfactory:

Calcium Hypophosphite	45	gm.
Potassium Hypophosphite	15	gm.
Sodium Hypophosphite	15	gm.
Diluted Hypophosphorous Acid	2	gm.
Sugar	640	gm.
Lactic Acid	1.25	gm.
Water, a sufficient quantity		
To make	1000	cc.

Dissolve the Hypophosphites in *four hundred and fifty cubic centimeters* of Water, add the Diluted Hypophosphorous Acid the Lactic Acid and the Sugar, which dissolve by agitation, and add enough water to make the product measure *one thousand cubic centimeters*. Filter and keep in a glass container, well corked.

Compound Syrup of Hypophosphites. The U. S. P. formula requires an increase in the amount of sugar called for and a rearrangement of the directions. If these corrections are made, a most satisfactory preparation will result.

The formula and directions are as follows:

Calcium Hypophosphite	35.000	gm.
Potassium Hypophosphite	17.500	gm.
Sodium Hypophosphite	17.500	gm.
Ferrie Hypophosphite	2.250	gm.
Manganese Hypophosphite	2.250	gm.
Quinine	1.100	gm.
Strychnine	0.115	gm.
Sodium Citrate	3.750	gm.
Diluted Hypophosphorous Acid	15.000	cc.
Sugar	815.000	gm.
Water, a sufficient quantity		
To make	1000	cc.

Dissolve the Calcium Potassium and Sodium Hypophosphites in *three hundred and seventy-five cubic centimeters* of water, to which *five cubic centimeters* of Diluted Hypophosphorous Acid has been previously added. Dissolve the Quinine and Strychnine in *thirty cubic centimeters* of Water, to which *ten cubic centimeters* of Diluted Hypophosphorous Acid has been previously added. Rub the Ferrie and Manganese Hypophosphites with the Sodium Citrate, add *thirty cubic centimeters* of Water and warm the mixture on a water-bath, stirring continuously until the salts are dissolved and a clear greenish solution is obtained. Mix the three solutions in the order named. Dissolve the sugar by the aid of a water-bath, stirring continuously. As soon as the sugar is dissolved remove the

syrup from the water-bath and filter. Finally add enough water through the filter to make the product measure *one thousand cubic centimeters*.

Note: Keep in a bottle covered with dark colored paper and well corked. In the northern latitudes, and during the cold season in some sections, the sugar may be reduced to 805 or 810 grms.

In conclusion I will say, that to be successful in preparing this and many other preparations, only the best and purest materials obtainable should be used. We can not expect good results from cheap, inferior materials. Consider as a guiding principle in your work the fact that there is nothing too good for the sick, that whatever is not good enough for your loving wife, your dearest child, and your father or mother—is not good enough for any one else. We should be conscious of the duty we owe to humanity, we should keep in mind that we are only the servants of the suffering, and as such should serve them rightly—with a sincere and honest consideration for their welfare.

SOME DISPENSING HINTS.

FRANKLIN M. APPLE, PHAR. D.

In the course of my routine duties I have encountered repeated difficulties, the solution of which has caused me considerable worry and thought, and I herewith offer the result of some of these efforts, hoping that they may prove to be of some benefit to some of my fellow workers.

In prescriptions calling for camphor and menthol or phenol and camphor to be dissolved in albolene or similar bland, oily liquids, I have followed the practice of placing the solids, in a fairly fine state of comminution, in the glass container in which they are to be dispensed with a small portion of the solvent, then carefully heating over an alcohol lamp, with gentle agitation, until dissolved, to which is added the balance of the solvent. By this means the trouble of washing out a mortar is obviated and no loss of medicaments results.

Anyone who has had any experience with methylene blue remembers what an annoying chemical it is, for it has the habit of depositing small particles thereof upon everybody and everything when triturating it with other remedial agents. By using the *small crystal* form of this chemical and moistening it so as to prevent its becoming light enough to float about in the air, we have had no difficulty in handling it without annoyance. As it is usually prescribed in combination with fixed oils, the latter can be used to moisten the chemical whilst reducing it to a finer state of comminution—preferably in a glass mortar, which can readily be cleansed.

When filling a prescription calling for soft capsules, containing oils, it is very annoying (and at times exasperating) to find one or more of the capsules imperfectly sealed, due generally to a small portion of the oil coming in contact with the sealing lip of the capsule. We have adopted the practice of wiping off carefully the tops of the capsules with pellets of cotton moistened with chloroform, using

care to not have too much chloroform upon the pellets and have never experienced any unsatisfactorily sealed capsules since following this custom.

When dispensing prescriptions calling for Pulv. Opii or Pulv. Ext. Opii, it is wise to bear in mind the fact that diluted alcohol is the menstrum used in manufacturing the soluble preparations thereof. Far more sightly products will result if this fact be remembered.

There is one shelf bottle that is commonly found in drug stores that should be taken out and destroyed without delay, viz., that intended for cod liver oil, which is filled and refilled until it renders first-class oil unfit for use, the cause for which is well known to every experienced pharmacist. We make it a custom to bottle our cod liver oil in empty containers, not holding over one pint, thoroughly cleansed and perfectly dry. One of these filled bottles serves as a shelf bottle until it is emptied, when it is thrown away and another filled one takes its place. Thus we always have a fresh bottle open—and the rank smelling container is eliminated (or, better stated, prevented). By this plan we find a good use for some bottles that previously had contained products of questionable therapeutic value.

Our hypodermic tablet case has proven of great value to us when weighing our small portions of potent drugs—giving us, conveniently, a degree of accuracy that is difficult to get in weighing the drugs themselves.

A PURE AD. LAW.

A Pure Ad. Law is not only a possibility, but among the probabilities of the near future. The success of that section of the Food and Drugs Act which relates to honest labels and advertisements has awakened possibilities in other lines of advertising. The National Federation of Retailers is hard at work molding public sentiment. The Associated Advertising Clubs of America freely state that many men in the advertising business recognize the need of such a law and are in favor of legislation which will ensure advertisements that tell the truth, the whole truth and nothing but the truth. It has been pointed out that such a law will bring about fair competition between the big mail order firms who do business at a distance from the customers and the home merchant who must show the goods that he sells.—*Meyer Bros. Druggist.*

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

THE PERSONAL ELEMENT IN ADVERTISING.

JOHN R. THOMPSON, PITTSBURGH, PA.

A member of your Commercial Section asked me to write a paper for his section. I told him I would if he would assign me a subject.

This he promptly did, and it was something about advertising. "Can the retail drug store compete with big stores in the advertising field" I think was his suggestion. I pondered the subject for many days. One day the answer was "Yes," but the next day it would be "No" just as emphatically; so I finally gave it up, and came to the conclusion that the right answer was twins.

The answer is yes, because some retail druggists compete very successfully with the big stores in the advertising field, and the answer is no because many druggists have tried this sort of competition and failed to make good.

For a druggist located in the suburb of a city to use the daily papers is, of course, out of the question for he would be compelled to publish his advertisements in a circulation that covers a large community and he could hope to effect only a small proportion of this community. If he is located where a majority of the readers may conveniently reach him, then there is no reason why he could not successfully bid for the business.

The druggist in a small town or in a local neighborhood cannot employ the same methods, either in advertising or conducting his business, as do the large stores, any more than the owner of one or two tenement houses may supply light and heat and janitor service as offered by the large apartment house owner. The methods of the large store are not the methods of the small one, but there are many good ways of advertising a small store that may be just as successful in proportion as those used by the large competitors.

It is up to the druggist to find out how he can advertise. I tried many methods before I finally struck my gait, and the plan I used might not work out under other circumstances. I published circulars describing my specialties in more or less glowing language; I got out price lists and talks on prescriptions. Sometimes my friends would tell me my efforts were good advertising, but I never could see that they produced results in the way of more business. After several years of effort in the field I one day wrote an ad. for my little four-page store paper, which opened up like this: "This little paper is sent out to tell the people about my drug store." That was the only inspiration I think I ever had. It wasn't much but I used it for all it was worth. Here is the way I reasoned to myself, now folks will say, "You say you are going to tell us about your drug store, now go to it." And I did go to it. I began to use the personal pronoun, and talked in my advertise-

ments just as I talked to people over my counter. There is nothing in the world more interesting than personal experience. People would rather hear you talk about yourself than anything else—if you tell the truth. They will read your advertisements about your business—your business—not the drug business in glittering generality—but your business—if you give it to them straight and tell the truth. From the time I began to really and truly “tell about my drug store” I could count results in cash. There are thousands of interesting things about the goods in a drug store, and the story of the druggist himself when told on the printed page or by word of mouth will be absorbed with avidity, provided always that it is the druggist's own story.

There was a book published recently by Mary Antin called “The Promised Land.” The book contains no romance, no history, no tragedy. It is the simple story of Mary Antin and it is all true. You will read every line of it and read lots of it twice, simply because it is the true story of a human being. Put yourself into your ads. and they will bring results; the more you tell about yourself the more people will like you.

Every druggist can advertise. Not necessarily like some other fellow does it. He must do some experimental work and find out where he is strong. It may be window displays. There is surely room at the top in that field. It may be at the soda fountain. There are plenty of chances for improving soda fountain drinks and methods. It may be in the keeping of a neat store, and here, too, there is much chance for betterment.

It may be in the publishing of a small periodical, as in my own case. My paper never contained any article that will be quoted in the Encyclopedia; it was not a brilliant example of grammatical excellence; but it was a good advertisement for my drug store because it was ME from beginning to end, and I was a good druggist, that point, of course, was always kept to the fore. I was no better, understand, than many others right around me, but I got more business than they did because I kept telling the people what a good druggist I was.

Many druggists say they cannot write an ad. Any druggist can write a better ad. himself than any one else can write for him.

Put this in your pipe and smoke it—if you have a drug store that is worth patronizing you CAN tell the people around you about it if you want to—and want to hard enough.

CAPITALIZING INDIVIDUALITY.

HUGH CRAIG, NEW YORK.

Individuality, like the artistic temperament, manifests itself in a wondrous variety of forms. But, unlike the other, individuality is common to all of us. True, it has been subdued in many by that tendency toward unity, cooperation, mass plays, so marked in the social economy of the present day. On the other hand, it has been cultivated by those who have turned to specialization, recognizing that

while united effort increases the margin of safety, it lessens the margin of efficiency.

"In union there is strength." "Too many cooks spoil the broth." There is an ancient saw for any purpose: "You pays your money, and you takes your choice." Yes; in union there is strength, but it is strength most woefully wasted, without the direction of a leader strong in individuality. In union there is strength; in individuality there is power. The difference is that of the cog in the ponderous machine and the little motor that turns the wheels. The cog and its fellow-cogs, turning in their fixed circumference, perform the one task for which they are designed; the possibilities of the little motor are as numerous as those of Aladdin's lamp.

Remains then the recognition of the possibilities of individuality to the pharmacist. Let me point out a few. Suppose we start with externals.

About half a mile below town, just where the brier-edged lane touches the bend of the creek, stands a group of silver birches. Many of our customers have oft-times noticed them; not a few have paused in admiration. Have we ever thought how well adapted is that picture for use on the labels of a special line of toilet preparations; what a stamp of individuality it would give?

Down at the old Planters' Hotel there presides over the kitchen one of those rare super-chefs, a real ol' mammy cook. What an individual mark of superiority her photograph on package of spice or bottle of flavoring extract!

And that intimate mark of individuality, our signature, how many of us use it on our prescription labels? How many of the packages that leave our stores bear this mark of personal endorsement? It should be on bottle, box and label.

Each of us endeavors to get some distinctiveness in his prescription bottles. It is possible and profitable to get more. And in this we can learn from the French makers of high-grade perfumes and cosmetics. Instead of picking out a design from A. B. Co.'s sample book and having it blown in the bottle, let us select a neat, distinctive, unlettered container and have the porter or apprentice mark each with fluoride "ink," using a rubber-stamp facsimile of our personally written name and address.

Why should we continue to use mussy sealing wax or unhygienically to lick stickers for atop our corks? The boy in his spare moments can burn on each a facsimile monogram, the die for which costs but a trifle. Everybody is *not* doing this.

It is not enough that these marks of individuality be distinctive alone; they must be marks of superiority. The perfumes and toilet specialties must be as pleasing as is the picture of the birches on the label. The spices and flavorings must be as satisfactory as ol' mammy's jumbles. The contents of the signed prescription bottle must be as good as the check which bears the same signature.

Throughout the store personality should be everywhere manifest. Individuality, but not freakishness, should stamp fixtures, cases, placards and arrangement. Upon the regular customer and upon the casual visitor there should be but one impression: that of the personality of the proprietor, not that of the sole agent for green-label nostrums, not that of the distributor of any ready-made wares. The "tub" of the retail pharmacy should "stand on its own bottom."

When we come to advertising, we enter individuality's most fertile field. But we must be careful of the tillage, for individuality of expression, unrestrained, sometimes works havoc immeasurable. Not all of us are advertising experts—for which we should be most grateful—but all of us know our wares well enough to tell their merits in our own way to those who are prospective purchasers—and the high-sounding phrases of the ad-writer are no weightier argument. So let us put the same personality into our advertisements that characterize our conversation with a customer, or our letters. And let us sign each advertisement in fac-simile in attestation of the verity of the statements made therein.

Into a thousand other ramifications might I trace the beneficent influence of individualized pharmacy, custom pharmacy, we might say. But on the violet-scented cream and powder for milady who affects the violet atmosphere, on the rose-odored specialties for the rose lover, on the personal interest in the researches of Doctor Studious, on the gentle introduction of the subject of their hobbies into the routine conversations with customers, and on the hundreds of other ways in which the personality of the pharmacist may be manifested in his practice, I shall but thus lightly touch. My message is this: Cultivate individuality, and capitalize it; stamp your personality upon every thing that pertains to your practice of pharmacy, and charge for it; meet the cut prices of the ready-made article with a custom-made, individualized article, a better article, at an advanced price; in your chosen vocation, as in your personal conduct, ape not the multitude, be yourself.

ANALYSIS BY MEANS OF CRYSTALLOGRAPHY.

Dr. A. E. H. Tutton, writing in the "Daily Mail" for September 13, states that the researches of Professor E. S. von Fedorow, of St. Petersburg, have extended the periodic law to crystallography, the slight differences of the interfacial angles of crystals following the order of progression of the atomic weights of the interchangeable elements in insomorphous series. Barlow in England and Fedorow in Russia conceived the internal structure of crystals as of a space lattice character, and have received "most marvelous confirmation" from the work of Professors Roentgen and von Groth in Munich, who have utilized the exceedingly short wave length of the Roentgen rays to provide definite evidence by diffraction photographs of the cubic lattice in crystals of zinc blende. This means that the molecules in the crystal and their arrangement have been visible. Professor von Fedorow has experimentally determined the "form symbols" of 10,000 substances. This enables a few measurements with a goniometer, followed by some simple calculations, to enable identity of an unknown crystal to be established, and it is claimed, thus rendering chemical analysis "superfluous."—*The Chemist and Druggist*.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

THE EVOLUTION OF LAWS REGULATING THE SALE AND USE OF POISONS.

M. I. WILBERT, WASHINGTON, D. C.

The pharmacy laws of the several states are so intimately associated with and so generally include restrictions on the sale of poisons that it is not infrequently supposed that the connection has always existed and that restrictions on the sale and use of poisons had their origin in the laws designed to regulate the practice of pharmacy.

Poisons have, from the very earliest periods of time, been considered with apprehension and awe and many attempts have been made to prevent or at least to discourage their use for improper or for criminal purposes. During the colonial period laws relating to poisons appear to have been confined to prohibiting the use of poisonous substances for criminal purposes. The nature of this earlier legislation is well illustrated by the following paragraph from the Colonial Laws of Massachusetts, "The Body of Liberties of 1641"; "If any person shall slay another through guile, either by poysoning or other such divelish practice, he shall be put to death. Ex. 21:14."

Even after the organization of the United States it was not until the third decade of the nineteenth century that any attempt was made to safeguard purchasers of poisonous substances by requiring a label calling attention to the dangerous character of the substance.

The first of these state laws may be found in the Revised Statutes of the State of New York (1829, Sec. 22) and reads: "No person is allowed to sell arsenic, prussic acid or any other substance or liquid usually denominated poisonous, without endorsing on it the word "Poison" in a conspicuous manner."

Two decades later (1848) New Hampshire enacted a law which required a record of the sale of arsenic, corrosive sublimate or prussic acid and several years later (1850) nux vomica and strychnine were added to this list.

In 1852, Ohio adopted a law designed to regulate the sale of poisons which required both a record of sale and a poison label and in October of the same year, at the organization meeting of the American Pharmaceutical Association, the "Standing Committee," appointed at the preliminary meeting the year before, presented a resolution which reads in part as follows: "The indiscriminate sale of poisons by druggists and apothecaries, is a serious evil in the United States as at present conducted. Any views which may originate in the Convention,

tending to abate this evil, would no doubt have some influence if circulated by its authority."

In accordance with the spirit of the resolution the members of the American Pharmaceutical Association undertook to compile and record the nature of the existing laws designed to restrict or safeguard the use of poisons and otherwise to control the trade in drugs and medicines.

At the meeting of the American Pharmaceutical Association in 1853 the Committee on the Sale of Poisons reported that the members "have been engaged since the time of their appointment in endeavoring to collect information relating to the subject * * * yet they have been but partially successful." The committee then reports at length on the requirements as they existed in some of the European countries and reprints the answers that were received to inquiries regarding existing legislation in this country. (Proc. A. Ph. A. 1853. p. 10.)

In this connection it may be interesting to note that so far as known the first law to regulate the practice of pharmacy in this country was enacted by the legislature of the State of New York in 1839 and was entitled: "An act to regulate the preparation and dispensing of medicines in the City of New York." This law required that persons to practice pharmacy in the City of New York must have obtained the diploma of the College of Pharmacy of the City of New York or some other regularly constituted college of Pharmacy or Medicine or have passed an examination of the censors of the Medical Society of one of the counties of the state.

Some 10 years later the State of Georgia enacted a law which required that a person to open or keep a drug or apothecary store must first obtain a license therefore from the medical board of his own school. Alabama, in 1861, passed a similar law but all these laws, so far as known, were inoperative because of the unwillingness of the medical societies involved to enforce them.

It is perhaps not generally known that the present type of pharmacy law, which includes the restrictions on the sale of poisons was first proposed by a special committee of the American Pharmaceutical Association appointed at the meeting held in the City of New York in 1867.

Under the able direction of the chairman, the late John M. Maisch, this committee, like one of its predecessors, made extensive inquiries regarding the legislation then in force. This report is presented in full in the Proceedings for 1868 (pp. 329-379) and in the Proceedings for the following year (v. 17, pp. 51-60) the committee presents and discusses the draft of a proposed law to regulate the practice of pharmacy and the sale of poisons.

This early draft is too comprehensive to discuss in detail in a brief review of the subject and it will suffice to say that the essential features of the proposed law are embodied in practically every one of the so-called pharmacy laws now on the statute books of the several states.

The first of the states to adopt the principles of this draft was Rhode Island (Laws 1870, Chap. 856.) In a number if not all of the state legislatures opposition appears to have developed on the part of representatives of the country districts and by far the greater number of the laws enacted during the remaining years of the decade from 1870 to 1880 were restricted to the regulation of

pharmacy in the larger cities. In the Proceedings of the American Pharmaceutical Association for 1872 (v. 20, pp. 150-161) the committee presents the laws adopted by the several state legislatures for the cities of New York, Philadelphia, Baltimore and San Francisco.

The Proceedings for 1873 (v. 21, pp. 506-508) contains a copy of the law passed in Ohio for cities of the first class, and the Missouri law, for the City of St. Louis, is presented in full in the Proceedings for 1874 (pp. 333-337) accompanied by a state law for Kentucky. During the remaining years of this decade five additional states adopted laws regulating the practice of pharmacy and during the decade from 1880 to 1890 no less than 25 states enacted laws of this type.

So far as known the Crimes Act of Pennsylvania (Laws 1860, No. 374) was the first American law to recognize the toxic and generally harmful character of morphine and the anticocaine law of Illinois (Laws 1897, p. 138) was the direct forerunner of our present day antinarcotic laws which, as now in force generally follow the suggestions laid down in the "Draft of an Antinarcotic Law" presented by James H. Beal at the meeting of the American Pharmaceutical Association at Mackinac Island, in 1903.

The history of the evolution of laws designed to regulate the practice of pharmacy and to restrict the sale and use of poisons is reflected in detail in the several volumes of the Proceedings of the American Pharmaceutical Association and the object of the present review is merely to call attention to the sequence of the development and to emphasize the important part taken by the members of the American Pharmaceutical Association, through the Committees and Sections of that Association in safeguarding the best interests of the public by suggesting and endorsing legislation designed to restrict the promiscuous sale of poisonous and habit forming drugs.

While the laws now in force are far from perfect and while much remains to be done before the distribution and use of harmful and poisonous materials can be said to be adequately safeguarded" our thanks, and the thanks of the community at large are due to the pioneers in the field who fought so valiantly for the recognition of pharmacy as a calling destined to take an important part in protecting the health and the lives of American people.

HISTORY OF KUMMERFELD'S LOTION.

OTTO RAUBENHEIMER, BROOKLYN, N. Y.

Among the sadly neglected studies is history of pharmacy and quite especially the history of drugs and galenicals. The writer, an enthusiast on this subject, cannot conceive how a pharmacist can truly love his profession without some little knowledge of its history, and he therefore advocates that such knowledge should be instilled into the student in his college course.

The notes which the author has collected on pharmaceutical history are quite numerous. The history of Kummerfeld's lotion has been selected as the topic for

this paper, not because it is such an important preparation, but for the following two reasons:

1. None of the American or English books, which the writer is acquainted with, give its formula and therefore Aqua Cosmetica Kummerfeldi was made No. 1 of the "Pharmaceutical Formulas" for the proposed "Recipe Book" in Journal A. Ph. A., February, 1912.

2. Its history serves as a good example of the evolution of a simple formula into a more complex one.

Madame Kummerfeld (whether Miss or Mrs. is unknown to the author) was an actress living in Weimar during the time of the celebrated German poet Johann Wolfgang von Goethe (1749-1832). I find that Helene Böhlman, the author, mentions Madame Kummerfeld in her writings. "Weimarer Ratsmädels" and "Andere Geschichten." "Die Kummerfelden," as the actress was commonly called, was in the habit of having a recipe compounded at the Weimar Apotheke, containing Precipitated Sulphur, Borax and Rose Water, which she used as a cosmetic lotion. In those days as well as in the present days, toilet articles, etc., used or endorsed by actresses naturally became famous, as is well illustrated in the use of henna by Madame Adeline Patti. Consequently Kummerfeld's Waschwasser came into use in Germany and the formula was modified to suit the need or fancy of the patient, or prescriber or dispenser. According to a communication of Dr. Maaz of Grossrudestadt in Pharmazeutische Zeitung, 1912, p. 76, another, very likely later, modification of Aqua Cosmetica Kummerfeldi is as follows:

Precipitated Sulphur	7.5 gm.
Lime Water	150. gm.
Sulphurated Potassa	0.6 gm.

I find that the borax in the original formula as well as the liver of sulphur in Dr. Maaz's formula have been omitted from the recipes in use at the present time and that camphor and glycerin have been added. The lime water is still retained in some of the formulas. The addition of camphor undoubtedly has the object of acting as a cooling, antiseptic, bleaching and antipruritic agent. The addition of glycerin has the object of preventing the lotion from drying too quickly and also to help to suspend the solids.

Some of the formulas, f. i. of the Dresden, the Saxon and the Hessian Apothecaries, and those in "Hager" and "Dieterich" contain also two per cent. of acacia, which in the writer's opinion is a decided advantage, being used to emulsify the camphor. That the formula for Kummerfeld's Waschwasser is important on the Continent can be seen from being official in the Netherlands Pharmacopoeia and in the *Ergänzungsbuch* (supplement to German Pharmacopoeia). Inasmuch as it is also frequently prescribed in the United States, especially by dermatologists, and as none of the American books seem to publish the formula, and as the writer, who acts as a pharmaceutic information bureau around Greater New York and vicinity, has been asked for this formula on numerous occasions, he has therefore published same in the department of Pharmaceutical Formulas in the Journal A. Ph. A., February, 1912, p. 169.

In order to familiarize the pharmacists and others with the origin of this

preparation this paper was written. For convenience and in order to make the formula better known, I again repeat it:

AQUA COSMETICA KUMMERFELDI.

Kummerfeld's Lotion or Cosmetic Water.

Camphor	10 gm.
Acacia, in fine powder	20 gm.
Glycerin	50 gm.
Precipitated Sulphur	100 gm.
Rose Water	820 gm.

To make 1000 gm.

Triturate the finely powdered Camphor with the Acacia and the Precipitated Sulphur, then add the Glycerin and gradually the Rose Water, triturating constantly so as to obtain a homogeneous lotion.

Shake well before dispensing.

THE CUT-RATE ROUTE.

Although price cutting is not confined at all to the drug trade, still the merchants who perhaps have gone the farthest in this kind of work and have given the cutter the most wide-spread advertising are the cut-rate druggists. This is doubtless because they have had the ignorance of the public upon which to trade. They have taken advantage of the fact that the druggist has long been heralded as a robber-profit man. They have been willing to admit and even claim this in order to exploit their position as the money savers of the community. Whether this attitude is a fair one, whether it is a loyal position to take or not, we are not disposed to say. But this much we think: the cut-rate route to a mercantile success is not a short cut by any means. While some cutters have succeeded, it has been largely due to the fact that they were shrewd merchants and good advertisers rather than to the mere fact that they lopped off the profits from certain lines of goods. We believe that if the case of every cutter were to be carefully analyzed we would find that had that man followed his same live publicity means and had he done as much good work in the way of displaying goods and helping to make them self-selling, and at the same time kept his prices up to the normal level of his town, he would have succeeded to a greater extent. He would have developed practically as much business, and he would have done it all on a profit-paying basis. He would not have found it necessary to pare salaries down so closely or to work so hard to sell certain lines on which his profit still existed. The cut-rate route is not the route to getting rich quick, and in most instances it has not proved the route to getting rich at all.—*The Spatula.*

Contributed and Selected

NOTES ON CHEMICAL TESTS OF THE UNITED STATES PHARMACOPŒIA.

CARL E. SMITH.

(Continued from page 538.)

CHRYSAROBINUM.—As medicinal Chrysarobinum is not the individual chemical substance so named by its discoverer, but a mixture of a number, neither a chemical formula, exact solubility constants, nor a definite melting point can consistently be stipulated, as is done in the U. S. P. The color is usually darker than "pale" orange-yellow. Market products are not "entirely consumed" on ignition, but the ash should not exceed 0.25 per cent., the limit set by leading foreign pharmacopœias. A limited number of specimens examined during the past 3 years, however, mostly yielded less than 0.1 per cent. In the identity test with fuming nitric acid and ammonia the color produced is violet-red rather than violet. The same applies to the lime water test. A test needed, not provided in the U. S. P. is one for the detection of chrysophanic acid. About 0.1 gm. of the sample is boiled with 20 cc. of water; the liquid, after filtration, should be neutral to litmus paper and should not be colored otherwise than pale yellow by a drop of ferric chloride test solution. This test is directed by several pharmacopœias.

CINCHONIDINÆ SULPHAS.—As the melting point is affected by the presence of small variable quantities of other cinchona alkaloids, it has little value as a test of identity or of purity. The salt should not leave more than 0.1 per cent. of ash. The sulphuric acid test for readily carbonizable matter should be made with about 0.1 gm. of the salt and about 2 cc. of the acid. The results of the test for fluorescing alkaloids depends considerably on the the volume of solution examined; it should not exceed 100 cc., otherwise the test will be too severe.

CINCHONINÆ SULPHAS.—In the requirement regarding solubility in chloroform "80 parts" are to be regarded as volume parts, i. e., 8 cc., not gm., should apply to this salt test.

COCAINA.—The melting point of the U. S. P. is one given by some authorities as that of the chemically pure alkaloid. Some variation should be allowed for the medicinal product, probably 96° to 98°. The ash should not exceed 0.05 per cent.

COCAINÆ HYDROCHLORIDUM.—The melting point varies so much in different hands, by reason of partial decomposition, that determination of it as a test of purity, or even of identity, is apt to lead to misinterpretation. It is better omitted from the official tests, as the others are sufficient for establishing identity and purity. The statement that the salt "is not colored by cold sulphuric acid" applies only when the proportion of the former is rather small; a mixture of 0.1 gm. of it

with 1 cc. of the acid should not show other than a slight yellowish color. The wording of the permanganate test for cinnamyl-cocaine is somewhat ambiguous and has lead to differences in interpretation. If it was intended that the violet color should remain entirely unchanged in half an hour, the test is too stringent; if it was intended that the violet tint should not disappear entirely within that time-limit, then it is somewhat too lenient. Most of the products now on the market do not completely decolorize 0.1 cc. of $n/10$ permanganate under the conditions of test. For the sake of uniformity MacLagan's ammonia test is better made with 0.2 cc. of ammonia water, measured with a 1 cc. pipette, instead of 4 drops. The precipitate should form within 5 minutes, but with sufficiently vigorous stirring usually appears in a considerably shorter time. The supernatant liquid, however, is not "perfectly clear," but holds in suspension for some time minute crystals of cocaine, which interfere with its transparency, but do not give it a milky or opalescent appearance.

CODEINA.—Because of decomposition at temperatures below that given as the melting point, determination of this is valueless. To prepare a 1 per cent. solution of codeine for the ferricyanide test for morphine, acidulated water or alcohol should be used, as the alkaloid is not sufficiently soluble in cold water.

CODEINÆ PHOSPHAS.—This salt effloresces rapidly at ordinary temperatures, losing all except $\frac{1}{2}$ molecule of its crystal-water. This makes it difficult to prepare it with fully 2 molecules of water (8.3 per cent.) Products of different makers, recently examined, contained $1\frac{1}{2}$ to $1\frac{3}{4}$ molecules, with the exception of a crystalline, uneffloresced salt, which contained only $\frac{1}{2}$ molecule. In view of this and in the interest of more uniform dosage, adoption by the U. S. P. of a salt containing not more than $\frac{1}{2}$ molecule of water would seem advisable, as this is evidently the most stable form.

COLCHICINA.—The term "leaflets" in the description may lead to the inference that the alkaloid is crystalline, which is not the case. An unofficial crystalline colchicine, containing chloroform of crystallization, however, is on the market. "Amorphous scales" would seem to be a better descriptive term than "leaflets." Chloroform is an impurity of which no account is taken in the U. S. P., but which is stated to be present sometimes in large quantities. The following test has been found in this laboratory to be satisfactory for detection of excessive quantities: A mixture of not more than 0.01 gm. of colchicine, 2 cc. of potassium hydroxide solution (5 p. c.) and a drop of aniline, heated to about 100° in a test-tube, should not develop an odor of phenyl isocyanide. Colchicine is officially described as "having an odor suggesting damp hay," but is now readily obtainable free from odor, as it should be.

COLLODIUM.—The U. S. P. gives neither descriptions nor tests, which are important to those who do not make this solution themselves. In a layer of 30 mm. it should not appear more than slightly yellowish nor more than slightly opalescent. Exposed to the air in a thin layer, it should leave a transparent, tenaceous film. When collodion is stirred with an equal volume of water, a viscid, stringy mass separates; this mixture should be neutral to litmus paper. On the basis of a number of specimens examined it is recommended to adjust the limits of specific gravity to 0.765 to 0.775 at 25° and the pyroxylin contents to 5.0 to 5.25 per cent., by weight, which corresponds to about 4 gm. in 100 cc. of solution at

25°. The pyroxylin is best determined by the following, slightly modified method of the German Pharmacopoeia: About 5 gm. of the collodion are weighed in a shallow, stoppered, flat-bottomed weighing-jar. About an equal quantity of water is then added, drop by drop, with stirring to divide the precipitate into separate clots. The mixture is dried to a constant weight at 100° to 110° and the residue weighed after cooling in a desiccator. This residue should burn rapidly with a yellow flame and it should not contain more than traces of substances soluble in either water, alcohol, or "absolute ether."

CRESOTUM.—This product, because of its naturally variable composition, frequently fails to conform to some of the U. S. P. specifications, although of high grade. This applies particularly to the statements that a solution of 140 parts of water is not perfectly clear and that a solution of 120 parts of hot water becomes turbid on cooling, the latter being given as a test of distinction from, and absence of, "coal-tar creosote." A considerable number of specimens, in which no admixture with coal-tar distillates was detected by reliable tests, dissolved clear in 140 parts of cold water and their solutions in 120 parts of hot water remained clear when cooled to about 25°. These statements, therefore, should be omitted at the next revision. There is an inaccuracy also in the statement, given as a means of distinction, that water-solutions of coal-tar creosote yield white precipitates with bromine water. Coal-tar distillates in which phenol and *o*-cresol predominate, may yield bulky, white or yellowish precipitates, but those consisting mainly of the higher boiling cresols and xlenols give compact yellow to brown precipitates. The specific gravities of creosote recorded during several years past have mostly been within narrow limits, namely 1.078 to 1.080 at 25°. The extreme variations were 1.075 to 1.087, a sample giving the latter figure containing an unusually large proportion, about 45 per cent., of guaiacol. As pointed out recently by J. W. England, the specification that "most of it" distils between 200° and 220° is too indefinite. A requirement that not less than 80 per cent. should distil within this range is quite feasible, as 85 to 95 per cent. of distillate is frequently obtained from market products within these limits. The requirements of the French Pharmacopoeia, in this respect, are probably too restricting. They are as follows: It should begin to distil a little above 200°; about one-fourth should distil between 203° and 209°; about one-half between 209° and 215°; the remainder below 225°.

CRESOL.—The composition of market products is very variable. Only a minor portion of a large number examined came within a reasonable interpretation of the U. S. P. requirements. Specific gravities ranged between 1.0255 and 1.0465 at 25°. Those having specific gravities above 1.038 contained more or less phenol and usually dissolved clear in less than 60 parts of cold water, while those free from Phenol invariably contained substances insoluble in water. Some samples gave on distillation but small fractions between 195° and 205°, instead of the required minimum of 90 per cent. Such products, of course, contain but little *m*-cresol, which is at present considered to have the highest disinfecting power, or of *p*-cresol, which is considered to be next in value. As regards the specific gravity, it may be said that this is not important as a criterion, since the composition is ascertained with greater certainty by fractional distillation and by solubility tests, but if it is to be retained, a wider range should be given, of perhaps

1.032 to 1.038, as has been proposed by H. V. Farr. The present limits exclude some products rich in the most valuable constituents.

CUPRI SULPHAS.—The limit test for iron, which is the most common impurity, is inconsistently stringent for a substance required to be only 99.5 per cent. pure. Presence of iron must also be considered in the choice of a method for the determination of copper. Volumetric determination by the well known cuprous iodide method gives satisfactory results. As the U. S. P. requires percentages to be calculated on the basis of the fully hydrated salt free from adhering moisture, it should be remembered that granular or powdered products are likely to be somewhat effloresced, while crystals usually contain enclosed mother liquors, although superficially dry.

ELATERINUM.—It is not certain that a physiologically active substance of definite chemical composition has as yet been isolated from *Elaterium*, as a different chemical formula has been assigned to elaterin by each of four investigators. It is certain that the preparation sold as elaterin is far from uniform in composition, as it has been reported to vary greatly in efficiency. For these reasons the Pharmacopoeia cannot, as it now does, give consistently either a chemical formula, molecular weight, melting point, or quantitative solubility statements. An identity reaction given in recent reference books, which is rather more characteristic than those in the U. S. P., consists in dissolving about 0.01 gm. of elaterin in about 5 cc. of melted phenol, then adding a few drops of sulphuric acid. The solution at once becomes crimson and changes quickly to scarlet. Because of the scant chemical knowledge of elaterin, only physiological means of standardization can be considered reliable.

FERRI CHLORIDUM.—According to the official method of preparation 10 parts of solution of ferric chloride, U. S. P., should yield 4 parts of product, containing theoretically 25 per cent. of iron. In practice, a larger yield of a product containing correspondingly less iron is obtained, as the solution, when evaporated to the concentration directed, must absorb water from the air before it can form a firm, crystalline mass. Made on a manufacturing scale, the salt contains 20 to 22 per cent. of iron, but the upper figure is not often reached. The generally accepted formula for this salt, $\text{Fe}_2\text{Cl}_6 \cdot 12\text{H}_2\text{O}$, corresponds to 20.7 per cent. of iron. It is therefore apparent that the present requirement of not less than 22 per cent. in the "dry" salt, which presumably means that allowance is to be made for water in excess $6\text{H}_2\text{O}$, is not tenable. It seems advisable to return to the specification of the U. S. P. of 1890 that it contain not less than 20 per cent. of iron.

FERRI ET AMMONII TARTRAS.—For the determination of iron it is directed to take the "dry" salt. It seems reasonable to interpret this as meaning "having a dry appearance," but it is also possible to interpret this as meaning a salt free from water of hydration. As most scale preparations of iron contain considerable quantities of the latter, difference in interpretation may cause marked differences in results of assays.

FERRI ET POTASSII TARTRAS.—In the first line of the last paragraph "dry" evidently means "of dry appearance." The quantity of hydrochloric acid should be increased to 5 cc., to prevent precipitation of potassium bitartrate.

FERRI ET QUININAE CITRAS.—In the quinine determination there is no good reason for directing spontaneous evaporation of the chloroform. It may just as

well be evaporated on a water-bath, with considerable saving of time. At it is difficult to remove chloroform completely at moderate temperatures from amorphous alkaloids, the quinine, after evaporation of the chloroform, should be dissolved in alcohol or ether, the solvent evaporated, and then the residue dried to a constant weight at 100° .

FERRI ET STRYCHNINÆ CITRAS.—Spontaneous evaporation of chloroform in the assay for strychnine causes unnecessary loss of time, but when an elevated temperature is employed, it should be low enough at the end to prevent loss of strychnine through spattering.

FERRI PHOSPHAS SOLUBILIS.—The identity tests are in need of revision, as they fail to show definitely the composition of the preparation.

FERRI PYROPHOSPHAS SOLUBILIS.—The identity tests do not differentiate this from the preceding preparation, which could be substituted for it without detection by the U. S. P. tests. Molybdate solution may be used as a means of distinction, but it should be remembered that a small amount of orthophosphate may be legitimately present in the pyrophosphate, being formed during the manufacture, also that in contact with the reagent pyrophosphate soon changes to orthophosphate.

FERRI SULPHAS EXSICCATUS.—Not "completely" soluble in water in the sense of making a clear solution, but a 5 per cent solution should not be more than slightly turbid when made with oxygen-free water. The U. S. P. does not explicitly state how much ferrous sulphate the exsiccated salt should contain. Prepared by the official directions it contains theoretically not less than 99 per cent of FeSO_4 , $1\frac{1}{2}$ H_2O , but allowance must be made for absorption of moisture during exposure to the air while the dried salt is powdered, transferred to containers, etc. A fair requirement would be that titration with permanganate should show it to contain not less than 95 per cent of FeSO_4 , $1\frac{1}{2}$ H_2O .

FERRUM REDUCTUM.—Much of the "iron by hydrogen" of the market has the appearance of being some other form, possibly high grade wrought iron. Such products are in rather coarse powder, but are still "very fine," as that term is defined in the U. S. P. They also have an unmistakable, though not pronounced metallic lustre, while the U. S. P. specifies a very fine, lustreless powder. They usually meet all the chemical requirements of the U. S. P. and have a tendency to test higher in metallic iron than those products which conform more closely to the physical characteristics given for "reduced iron" in the various pharmacopœias, including the U. S. P. The superficial physical differences between these doubtful products and such as are undoubtedly made by reduction with hydrogen are sufficiently slight to be overlooked by many and to cause differences of opinion as to whether or not a given specimen conform to the letter of the present U. S. P. specification. It should be noted, in this connection, that the official definition of "reduced iron" fails to specify any particular method of reduction, so that any powdered iron conforming to the description and standing the tests for purity and strength will be admissible. If it can be shown that reduction by means of hydrogen yields a product therapeutically superior to those obtained by other means, then the definition should clearly state that this method only should be used and tests should be devised to distinguish products so made from others. The present

assay method is adapted only to iron in extremely fine powder and has been found even less satisfactory than the mercuric chloride method of the U. S. P. of 1890. This latter method, however, in its present improved form, is the most reliable known at this time. In Treadwell and Hall's Quantitative Analysis it is given as follows: "About 0.5 gm. of ferrum reductum, in the form of a fine powder, is placed in a 100 cc. graduated flask, from which the air is replaced by CO_2 , 3 grms. of solid mercuric chloride are added and 50 cc. of water. The contents of the flask are then heated to boiling, by means of a small flame, and the liquid boiled for a minute. The flask is then filled up to the mark with boiled water. After cooling to 15° the solution is again carefully brought to the mark, well shaken, and then allowed to stand in the stoppered flask until the precipitate has settled. The liquid is then poured through a dry filter and the filtrate caught in a flask filled with carbon dioxide. Of this filtrate 20 cc. are taken, acidified with 20 cc. of sulphuric acid (1:4), treated with 10 cc. of manganese sulphate solution (1 liter contains 67 gm. of $\text{Mn SO}_4 + 4\text{H}_2\text{O}$, 138 cc. of phosphoric acid, sp. gr. 1.7, and 130 cc. of sulphuric acid, sp. gr. 1.82) diluted to 200 cc. and titrated with tenth-normal permanganate solution." For all except extremely fine powders the boiling should be extended to at least five minutes.

GLYCERINUM.—While perfectly pure glycerin may be entirely "colorless and odorless," this characterization, in the U. S. P., of the best article furnished to the drug trade, is not strictly accurate, but the best grades appear colorless when viewed crosswise in a colorless glass tube 30 mm. in diameter. In large bulk they are more or less yellowish; a bluish or greenish tint would indicate the presence of coloring matter, added to mask a yellow tint. The German Pharmacopoeia requires, as a test for substances added to improve the appearance, that a mixture of 5 cc. each of glycerin and diluted sulphuric acid (16 p. c.) should not become yellow when boiled. Even the best commercial grades have a faint, fat-like odor, noticeable in the cold only when a considerable bulk is examined. J. M. Starkie has pointed out that the U. S. P. specific gravity is too low for glycerin of 95 per cent. and should be changed to 1.249 at 25° . The official test with Fehling's solution for sugars and that with sulphuric acid for "readily carbonizable impurities have been criticized by glycerin manufacturers as apt to mislead. In the experience of this laboratory, however, these tests are satisfactory when properly made. A very slight deposit of cuprous oxide should be disregarded, as this frequently forms after some hours when no sugars are present, but is caused by traces of other reducing substances. With glycerin containing enough sugar to make adulteration worth while, a decided precipitation would take place almost at once. The official test for butyric acid, which is in reality a test for esters of volatile fat acids in general, has been found too severe. Tests of this kind are being replaced by leading pharmacopoeias and other authorities with limit tests, such as the following: A mixture of 50 gm. of glycerin, 25 cc. of $\text{n}/10$ potassium hydroxide, and 25 cc. of water, boiled for 5 minutes, then cooled, should not require less than 20 cc. of $\text{n}/10$ acid for neutralization, with phenolphthalein as indicator.

GOSSYPIMUM PURIFICATUM.—The U. S. P. specifications require revision in several particulars. Those of some other pharmacopoeias are in some respects more

definite or more exacting. In this connection some of the requirements of these other authorities are of interest, as follows: It must be uniformly soft, i. e., free from lumps or hard flakes (German, Netherlands, Swiss, Japanese, Austrian). It must contain only slight traces of chlorides, sulphates, or calcium salts (Germ., Neth., Swiss, Jap., Aust., Belg.). Of an extract prepared with boiling water (1 in 10), 10 cc. are mixed, after cooling, with 3 drops of a 0.1 per cent. solution of potassium permanganate and a few drops of diluted sulphuric acid. The mixture should not be entirely decolorized in 5 minutes (Germ.). Similar test (Swiss, Jap., Aust., Belg.). The fibers should be at least 3 cm. long (Neth.); 3 cm. long in greater part (Swiss). Absence of foreign fibers by microscopical examination (Swiss). An extract prepared with boiling water (1 in 10) should not become colored in 5 minutes if mixed with potassium iodide solution and starch paste (Neth.). Limit of moisture, 5 per cent. (Neth.); 7 per cent. (Swiss). A water-extract (1 in 10) should not be opalescent, soapy, or colored (Swiss). Limit of ether-soluble matter (fat), 0.2 per cent. (Neth.); 0.6 per cent. (Swiss). If the statement of J. Thomann, that presence of more than 0.15 per cent. of fat prevents cotton from sinking readily in cold water, can be verified, a special test for a limit of ether-soluble matter will be superfluous.

GUAIACOL.—As this substance acquires a color on exposure to light and air, it cannot be expected to be "colorless" after having been kept for some time, but it should not appear more than slightly yellowish in a stratum of 2 cm. The official melting and boiling points are those given by some authorities for chemically pure guaiacol and are not applicable to the medicinal article. As the permitted variation in specific gravity implies allowance of some impurities, corresponding variations in the melting range, approximately 27° to 30° , and in the boiling range, approximately 203° to 206° , should also be allowed. Market products often exceed these limits. In the application of the potassium hydroxide test a "nearly white" mass is seldom obtained. With most specimens tested it was more or less gray, varying with the intensity and duration of heat applied. It is probable that this test, if narrowly interpreted, would cause rejection of many excellent products. Samples failing to stand the official test for "oily hydrocarbons" are sometimes met with; two of recent date yielded liquid residues consisting of brown globules, which were partially insoluble in water, but readily soluble in acidulated water, therefore probably not hydrocarbons, but of a basic nature.

GUAIACOLIS CARBONAS.—The melting points given in the U. S. P. differ considerably from those given in most other pharmacopoeias, which also differ much among themselves. Statements of the melting point of the pure substance in chemical literature are also at variance with each other. As a determination of this constant constitutes a most important test for the detection of excess quantities of other creosote compounds, greater certainty on this point is desirable. Determinations made in this laboratory indicate that chemically pure guaiacol carbonate melts at about 86° to 86.5° , when heated at a rate not exceeding 0.5° per minute in a capillary tube. These results were obtained with a commercial specimen that was recrystallized from alcohol and from benzene until there was no further change in melting point. In view of these results and the quality of the available market products, it is recommended that the present U. S. P. limits,

84° to 87°, be retained. In addition to the official tests, the following, taken from other pharmacopœias, may be aids for ascertaining the quality of this substance: A saturated solution in alcohol should be neutral to litmus paper that has been moistened with water. A solution of 0.1 gm. in 2 cc. of sulphuric acid should be colorless or not more than slightly yellow. Not more than 0.1 per cent. of residue should remain on incineration.

HEXAMETHYLENAMINA.—The U. S. P. gives no tests for impurities. The following have been adapted from the more recently published works to the purest products of the American market: It should volatilize, when heated, without leaving more than 0.05 per cent. of residue. A water-solution (1 in 50) should not become colored or turbid when mixed with an equal volume of hydrogen sulphide solution (heavy metals). Other portions of the water-solution, acidulated with nitric acid, should give no reaction with barium chloride for sulphates and not more than a slight reaction with silver nitrate for chlorides. No color or turbidity should be produced, if 100 cc. of a water-solution (1 in 20) be heated to boiling with 0.5 cc. of Nessler's reagent (ammonium salts or paraformaldehyde).

HOMATROPINÆ HYDROBROMIDUM.—Owing to partial decomposition of the salt at the melting temperature, the melting points obtained with the same sample by different analysts are likely to vary considerably. This is also indicated by variations in the figures given in the literature, namely 209° to 216°. The rigid figures of the U. S. P., 213.8°, should therefore be replaced by flexible limits, with the understanding that the melting point is not to be considered a test of purity. Attempts to separate small quantities of the free alkaloid in a form suitable for determination of its melting point, have so far been unsuccessful, either by the official directions or other means; on evaporation of the solvent a semisolid amorphous residue was always obtained, which did not solidify on standing.

HYDRARGYRI CHLORIDUM CORROSIVUM.—The official test for "many foreign salts" is undesirable as well as superfluous, as these impurities are determined more conveniently and accurately by their insolubility in alcohol and by their remaining as a residue when the salt is volatilized by heat. The salt should not contain more than 0.1 per cent. of non-volatile matter. The test for arsenic is unnecessarily elaborate and time consuming, if the uses of the salt be considered. The simpler test of the U. S. P. of 1890 answers every practical purpose, if a test is considered necessary. Of 12 other pharmacopœias examined not one gives a test for arsenic. For an assay, precipitation and weighing of the mercury as sulphide is doubtless the most satisfactory of the methods requiring no special apparatus and is generally considered more trustworthy than the various volumetric methods so far proposed. The convenience and accuracy of electrolytic determinations of mercury is well known. However, as a routine test, a quantitative determination of mercury is hardly required, as the percentage of mercuric chloride can be indirectly determined from the quantity of alcohol-insoluble matter, which includes all of the usual impurities this salt contains.

HYDRARGYRI CHLORIDUM MITE.—Although required to be only 99.5 per cent. pure, this salt almost always contains less than 0.1 per cent. of impurities. However, the acetic acid test for ammoniated mercury is too stringent for any of the

wellknown brands of calomel in this market, but all products, to be acceptable, should stand the following: If 0.5 gm. of the salt be heated in a test tube with 10 cc. of potassium hydroxide test solution, the vapors should not be alkaline to litmus paper. The tests for "foreign salts" and "foreign metals" are advantageously replaced with volatilization of about 2 gm. of the salt in a porcelain crucible, when not more than 0.05 per cent. of residue should remain. As any specimen that stands the official tests, or nearly so, cannot well fail to contain the required minimum percentage of mercurous chloride, a quantitative determination of mercury should usually be unnecessary. The volumetric methods so far published cannot be considered as accurate as the well-known gravimetric methods, but results accurate within 0.3 to 0.5 per cent. may be obtained by Hempel's method, slightly changed as follows: 50 cc. of $n/10$ iodine are added to 0.8 to 1 gm. of the sample, contained in a glass-stoppered flask of 250 to 300 cc. capacity. When the salt is moistened throughout, a solution of 2 gm. of potassium iodide in a few cc. of water is added and the mixture *at once* briskly shaken in the stoppered flask until solution of the mercury compound is complete. The excess of iodine is then titrated with $n/10$ sodium thiosulphate, with starch solution as indicator. each cc. of $n/10$ iodine ($O=16$) consumed corresponds to 0.02361 gm. of $HgCl$.

HYDRARGYRI IODIDUM FLAVUM.—The official tests fail to provide for calomel as an impurity and adulterant. Excessive quantities of it are perhaps most conveniently detected by a determination of the mercury, which should range between 60.9 and 61.5 per cent. in a salt of U. S. P. standard. Hempel's method, as above described, is applicable.

HYDRARGYRI IODIDUM RUBRUM.—The required minimum of 98.5 per cent. of $Hg I_2$ is unnecessarily low, as the impurities in a carefully made salt should not exceed 0.1 or 0.2 per cent. Complete solubility in alcohol should be an additional requirement, to exclude calomel and red mercuric sulphide. With this addition, the U. S. P. tests are sufficient to establish the purity of this salt without quantitative determinations of mercury and iodine.

HYDRARGYRI OXIDUM FLAVUM.—In making the test with oxalic acid it is important that the oxide be quite free from small lumps, as these are not readily converted into the white oxalate. The test is, however, fallacious in this respect, that red mercuric oxide can be powdered so fine that its color will not only be the same as that of precipitated mercuric oxide, but that it will also be readily changed to oxalate under the conditions of the test. The mercury in mercuric oxides is determined accurately and quickly by titration in nitric acid solution with sulphocyanate, the procedure being the same as with silver determinations according to Volhard's method. Each cc. of $n/10$ sulphocyanate ($O=16$) corresponds to 0.01083 gm. of $Hg O$. In presence of more than traces of chlorides the method is not exact.

HYDRARGYRI OXIDUM RUBRUM.—This product should be required to contain not more than 0.1 per cent. of non-volatile matter. The official test for "absence" of nitrate is not delicate enough to detect traces, nor is it practicable to make this product free from nitrate, but it should stand the test as now given.

HYDRARGYRUM.—More stress should be laid on complete solubility in nitric

acid, as a test for tin and antimony, and on the residue after volatilization, in connection with which "no appreciable residue" should be defined. Purified mercury of the market contains 0.02 to 0.05 per cent. of non-volatile matter.

HYDRARGYRUM AMMONIATUM.—It is not "wholly" volatilized by heat, but the residue should not exceed 0.05 per cent. Solution of the compound in diluted hydrochloric acid, precipitation and weighing of the mercury as sulphide has been found a satisfactory method of assay.

HYDRARGYRUM CUM CRETA.—The test for mercurous oxide should be made with the same proportions of materials as are directed in the test for mercuric oxide. A requirement of not less than 37 and not more than 39 per cent. of mercury should probably be made and a method of assay added. Dissolving in nitric acid, evaporating to dryness on a water-bath with a decided excess of nitric acid, then taking up in acidulated water and precipitating a mercuric sulphide, has been found a satisfactory method.

(To be continued.)

THE PRESERVATIVE ACTION OF ESSENTIAL OILS.

J. R. RIPPETOE, P. D. AND L. E. WISE, PH. D.

INTRODUCTION.

The present status of food preservatives in this country is a peculiar one. The past few years have shown that the addition of benzoate and salicylate of soda to food preparations is frowned upon, even if the chemicals themselves are not—in the opinion of some food experts—of a highly deleterious nature. Nor is the use of inorganic preservatives viewed with much favor. Copper salts, the sulphites, the fluorides, boric acid, all have had their detractors and all of them are gradually leaving the formulae of the manufacturers. Added preservatives of this type may, therefore, be considered (temporarily at least) under the ban.

And yet, foods, beverages and pharmaceutical products which act as culture media for various bacteria and which will permit the growth of mold must of necessity be preserved in order to make them articles of commerce. There is indeed one class of natural products which has for ages past been used perhaps unwittingly by house wives and manufacturers in the preservation of their food stuffs. We have reference to the spices, and especially to cinnamon, mustard and cloves, which, as a recent investigation by Hoffmann and Evans¹ has shown—are highly preservative in their action towards spore forming bacilli and the yeasts. It seems quite reasonable to assume that the preservative nature of these

¹J. Industrial and Eng. Chemistry, Nov., 1911, 835.

spices may be directly traced to their specific and characteristic constituents, the essential oils, and it is an investigation of the action of these oils that has been set forth in this report.

The antiseptic action of many of the common (and not a few of the less well-known) essential oils has been made the subject of some extended researches,² although their preservative action has received little attention in the literature.

In 1895, Weinsche³ mentioned the fact that menthol, the terpene-alcohol of peppermint, when in a dilution of 1 to 3000 arrested the growth of comma and cholera bacilli.

In 1902, Calvello⁴ stated that a 7 to 8 per cent. emulsion of cinnamon oil and an 11 per cent. solution of oil of thyme had the same effect in sterilization as a one per cent. solution of corrosive sublimate, and that oil of cinnamon, in an emulsion carrying 9 per cent. of the oil, effected complete sterilization. Furthermore, the disagreeable, "secondary" effects of mercuric chloride were not apparent.

In 1903, Marx,⁵ continuing the previous work of Konradi examined terpineol, vanillin, heliotropin, and other substances of an aromatic nature, for the same purpose. The development of such pathogenic organisms as the resistant anthrax spores and staphylococci pyogenes aureus were arrested by the substances under investigation. A saponaceous emulsion of terpineol was found to be strongly antiseptic. Marx advanced the theory that the degree of bactericidal action was directly dependent on the oxygen-activating power of the aromatic examined—i. e. the alleged property that these substances have for rendering oxygen more active as a germicide.

The same year R. Kobert⁶ in an article on the "Pharmaco—therapeutics of Aethereo-Oleosa. mentioned the anti-microbic properties of essential oils, and stated that the oil of turpentine when exposed to the air, prevented putrifaction, that limonene and methyl salicylate were both disinfectants and that menthol and thymol were of value as antiseptics in dental use.

Heller⁷ investigated the toxic effect on plants of the vapor of certain essential oils. He found that in the liquid state or in aqueous solution, these oils were much less potent in their effect. Vandeveld⁸ compared the poisonous character of different essential oils and their constituents by means of plasmolysis, comparing their toxicity with that of ethyl alcohol (taken as 100). He found that

²We wish at this point to state that many of the references to the bactericidal action of the essential oils have been found in the excellent physiological and pharmacological notes of Schimmel's Reports. For the earlier literature much information has been gained from Sternberg's *Text-book of Bacteriology*.

³Therapeut. Monatshefte, No. 9.

⁴Pharm. Ztg. 47, 759.

⁵Centralbl. für Bacteriologie u Parasiten Krankheiten, 33, 1-74.

⁶Schimmel's Report, Oct., 1903.

⁷Thesis, Leipzig, 1903.

⁸Bull. de l' Assoc. Belg des chin 17, 269.

thymol, menthol, cinnamic aldehyde, oils of cassia, cloves, white thyme, cinnamon and red thyme were all more than one hundred times as powerful as the standard; that peppermint, nutmeg, and star anise were more than fifty times as toxic, and that carvone, benzaldehyde, oil of bitter almonds, caraway, terpeneless lemon, neroli, angelica, anise, (anethol) cognac and lemon were all more potent in their action than the alcohol itself.

In 1904, Liebreich⁹ reported the germicidal action of oil of mustard. About the same time. Hall¹⁰ published a research on the bactericidal and antiseptic action of the constituents of eucalyptus oils. He stated that cineol was the least active of the eucalyptus components and that aromadendral, piperitone and phellandrene were its most active bodies. *B. coli communis* was experimented upon. The author claimed that ozonized oils increased the antiseptic value of cineol — and he recommended their use in medicine.

In 1906, K. Kobert¹¹ and his co-worker Bruning¹² determined the relative antiseptic values of a large number of volatile oils, depending on the inhibitory action of these oils on the hydrogen sulphide generation which normally takes places through the action of bacteria in milk containing finely powdered sulphur. Their articles are well worthy of note, and we do not think it out of place to give a brief resume of their results.

Kobert found that oils of amber, anise, bergamot, calamus, cardamom, cedarwood, celery, copaiba, cubeb, cumin, cypress, erigeron, estragon, fennel, ginger, juniper, savin, turpentine (free from oxygen), valerian, and wintergreen — were all very feeble in their action; that angelica, citronella, geranium, jaborandi, lavender, patchouli, peppermint, peruvian balsam, pinus montana, rue, sandalwood, tansy, thyme, wild thyme and wormwood were feeble; that basil, eucalyptus, linaloe, niobe, orange blossom, palmrosa, pennyroyal, rosemary and sage oils were intermediate; that bay, cajuput, caraway, coriander, dill, double caraway, jasmine, pine needle, spearmint, spoonwort, *ozonized* turpentine, wormwood and ylang ylang oils were strong; and that bitter almond, cassia, cherry laurel, cinnamon, mustard and spike oils were very powerful antiseptics. Of the important constituents of essential oils, and certain others Kobert found that ethyl alcohol and santalol, citral and heliotropin, muskone and thujone, anethol, apiol, isomyristicin, isosafrol, methyl chavicol and thymol, camphene, phellandrene and the terpenes of dill and rosemary oils all showed *very feeble* antiseptic properties; that citronellol, geraniol, safrol, pinene, and the terpenes of bay and citronella oils all showed slight antiseptic value; that carvone, pulegone, menthyl-heptenone, myristicin, terpinene, were moderate bactericides; that furfuric alcohol, linalool, terpineol, fenchone, menthone, eugenol and limonene were strong in their action and that benzyl alcohol, anisic aldehyde, benzaldehyde, cinnamic aldehyde and isoeugenol were very *powerful* as inhibitory agents.

⁹Ther. Monatshefte 18, 65.

¹⁰F. D. Chem. Industry XXIII (1904), 1233.

¹¹Schimmel's Report, Oct., 1906.

¹²Centrbl. für un Medizin, 27, No. 14.

His work further shows that most esters such as amyl and methyl salicylate, bornyl acetate and valerianate and linalyl acetate are very poor, and that only benzyl acetate and methyl benzoate may be taken as moderate antiseptics. Cymene and cineol may be described as medium in their bactericidal value and $C_{10}H_{16}O_2$ —the active principle of wormseed oil (known as "ascaridol"), is very powerful in its action.

There are several interesting differences between the observations of Kobert and those of Bruning. The latter placed bitter almond oil and terpinene among the very weak antiseptics, while the former stated that almond oil, was a very powerful and that terpinene was a mild antiseptic. Less striking differences are also to be noted in oils of turpentine (ozonized and free from oxygen) in dill, pine needle, and coriander oils and in linalool, spoonwort oil and terpineol. These variations may have been due to the bacteria-content of the milk; to change or decomposition of the substance tested or to the doubtful blackening of lead acetate paper. Both investigators noted the weak antiseptic character of the terpenes and both claim that terpeneless oils are useful in medicine.

In 1906, as well, we find the work of Kettenhofen¹³ on the destructive influence of ylang-ylang oil on micro-organisms.

In 1907, Bruning¹⁴ published an article on the potent active principle, of chenopodium oil— $C_{10}H_{16}O_2$. K. Kobert¹⁵ also continued his noteworthy researches on the bactericidal value of essential oils—and investigated the differences between terpene and terpeneless oils of the same source. His results show that in general it can be assumed that terpeneless oils are at least as powerful in their action as those containing terpenes, and that in certain cases (such as oils of bergamot and citronella) the terpene free variety were the more powerful antiseptics. He also recorded the fact that the same influence was exerted by various oils on pure cultures, as on the normal milk bacteria, referred to in his former research.

1910 Gilmour¹⁶ studied the relative germicidal values of essential oils used in dental surgery. Oils of cassia, cinnamon, cloves and bay (in the order named) head the list as valuable bactericides. These are followed by peppermint, eucalyptus, thyme and cajuput, while oil of gautheria is mentioned as being of insufficient value for the root canal dressing.

Martindale,¹⁷ that same year published the outcome of a series of examinations of aqueous and saponaceous solutions of oils, compared with that solution phenol which represents the minimum strength necessary to destroy a specific organism. Assuming that *a* was the percentage of carbolic acid solution required for this purpose, that *b* was the percentage of oil required under similar conditions,

¹³Thesis Boon, 1906.

¹⁴Deutsche Med. Wochen Schrift, 1907, No. 11; c. f. Thelen Thesis Rostock, 1907.

¹⁵Pharm. post 40, 627

¹⁶Pharm. J. and Pharmacist, May, 1910, 844.

¹⁷Perfume and Ess. Oil Record, 1, 266.

he termed a/b the "phenol coefficient" and established this ratio for a large number of oils. The highest coefficient naturally indicates the highest antiseptic value. The following oils or constituents together with their respective coefficient have been listed:¹⁸

Origanum (W-25.76), thymol (S-25.29), carvacrol (S-21.32), thymol (W-19.41), thyme oil (S-14.85, W-13.38), geraniol (S-12.29), cinnamon leaf oil (S-9.66), cinnamon bark oil (S-8.91), clove oil (S-8.88), cinnamic aldehyde (S-8.0), citronellol (S-8.11), cinnamon oil (S-7.92, W-7.11), rosemary oil (S-5.94), otto of rose (S-5.94), cassia oil (S-5.35), wintergreen oil (S-4.64), eucalyptus (amygdalina) (S-4.35), lavender oil (Mitcham) (S-4.94), lemon oil (S-3.94), bitter almond oil (S-3.76), eucalyptol (S-3.76), eucalyptus-globulus (S-3.55), sandalwood (S-1.67), birch tar oil (S-1.67), cade oil, less than one.

The results (especially those involving cassia, which is apparently weaker than rosemary, and bitter almond oil which is even less potent than oil of lemon) are not entirely in accord with those of Kobert which have been summarized above.

OBJECT AND SCOPE OF INVESTIGATION.

The purpose of this report is to present in systematic form the preservation value which may be attached to a number of essential oils used in pharmaceutical practice, largely for flavoring purposes. The efficiency of the oil has been very roughly gauged by its power to arrest the growth of mold in a 50 per cent. glucose solution, (series A) and a 50 per cent. sugar solution containing extract of meat and peptone, (series B) within certain periods of time. All results of this work should be taken qualitatively. We have not undertaken to establish the comparative preservative value of our oils, excepting in a very general way. We have tried to show the inefficiency of certain oils as preservatives, and we have tried to show which oils preserve satisfactorily.

PROCEDURE.

Preliminary Examinations of Oils. The oils, with very few exceptions, were examined physically (gravity, optical rotation etc.) — and whenever possible the characteristic constituents were determined by reliable analytical methods. The appended list is a complete summary of this work. (The chief constituents are taken directly from Parry's Chemistry of Essential Oils and Artificial Perfumes 2nd. Ed.) Further than these, citral, menthol, thymol and terpineol have been included in our experiments.

¹⁸W indicates aqueous; S indicates saponaceous solution of the oil.

Oil	Source	Chief Constituents	S/G 25/25°C	Optical Rotation 25° C	Approximate Percentage of Characteristic Constituents	Other Tests
Almond, Bitter.....		Benzaldehyde; H C N.	1.0586		91% Benzaldehyde	
Almond, Bitter (no acid)	Schimmel	Benzaldehyde, phellandrene; methyl ethyl- acetic acid; oxypentadecylic acid.	1.0453 .8607	+34.9°	99% Benzaldehyde	
Angelica		Methyl chavicol; anethol; an- iseketone; anisic aldehyde and anisic acid.	.9745	very slightly +	77% Anethol	Congealed oil melts 16°-17° C.; B.P. (major portion) 225°-235° C.
Anise		Linalol; linalyl acetate; limo- nene; bergaptene.	.8746	+21.6°	34.9% { Linalyl Acetate	
Bergamot		Methyl salicylate. Cineol; terpineol; terpinyles- ters; etc.	1.1817 .9166	+0° — 1.8°	68% Cineol	B. P. 218°-221°
Retula	Schimmel	Terpenes; sesquiterpene; oxy- genated bodies not identified.	.9568			
Calamus	Metzner & Otto	Limone; carvone.	.9012	+78.7°	54% Carvone	Soluble in 1 part 90% alcohol
Caraway Seed.....		Terpineol; dipentene; limo- nene; cineol; acetic esters.	.9289 .9348	+30.9° +38.5°		
Cardamom	Schimmel (Ceylon)					
Cardamom	Prepared in this lab- oratory from Man- galore Cardamom					
Cassia		Cinnamic aldehyde; cinnamic acid ester; O-methyl cumaric aldehyde.	1.0672		75% Cinnamic Aldehyde	
Celery	Horner	Limone; sedanollic acid; sed- anolide; sedanonic acid, etc.	.8639 .9685 1.0368	+76.6° — 2.7°		
Chenopodium		Cinnamic aldehyde; eugenol; phellandrene.	1.0209	— 1.1°	83% Cinnamic Aldehyde	
Cinnamon	Schimmel	Geraniol; borneol; citronellol; camphene; dipentene; methyl heptenone. Eugenol; amyl methyl ketone; caryophyllene. Pinene; linalol.	.8979 1.0417 .8686	—11.1° — 0.4° +10.7°	74.5% Cinnamic Alde- hyde Total Geraniol—27.5% Total Citronellol—28.3% 87.5% Eugenol	Soluble in 2½ parts 70% alcohol
Citronella						
Cloves	Metzner & Otto	Dipentene, cadlence, cubeb camphor.	.8721 .9192	—33.5° (?) —25.1° + 2.6°		
Coriander .....			.9206 .9076			
Cubeb (9199).....	Schimmel	Cymene; cumic aldehyde.	.9094	+69.7° + 1.7°	46% Carvone 72% Cineol	Soluble in 3½ parts 70% alcohol
Cubeb (9813).....		Limone; carvone; dill apiol. Cineol; other const. depending on source.	.9194			
Dill	Schimmel	Pinene; phellandrene; dipen- tene; limonene; fenchone.	.9668	+18.1°		
Eucalyptus						
Fennel						
Geranium, Rose (Algerian)	Schimmel		.8927	— 8.1°	{ 22.6% Geraniol tiglate 75.2% Geraniol (total)	

Oil	Source	Chief Constituents	S/G 25/25°C	Optical Rotation 25° C	Approximate Percentage of Characteristic Constituents	Other Tests
Geranium, Rose.....	Bertrand	Geraniol citronellol; and tiglic acid esters.	.8976	+ 0.8°	{ 15.6% Geraniol tiglate 48.2% Geraniol (total)	
Ginger	Schimmel	Camphene; phellandrene; sesquiterpene.	.8773	-45.1°		
Hedeoma	Schimmel	Hedeomol; pulegone.	.9322	+ 17.6°	Pulegone 62%	
Horsemint	Schimmel	Dextro-limonene; cymene; thymol.	.9206		Phenolic bodies 46.8%	
Juniper berries.....	Metzner & Otto	Pinene; cadinene.	.8700	- 7.8°		
Lavender flowers.....	Schimmel No. 1	Linalyl acetate; geraniol; sesquiterpene, pinene; limonene.	.8872	- 4.4°	26.8% Linalyl acetate	
Lavender flowers.....	Mottet (French)		.9092	- 1.6°	29.6% Linalyl acetate	
Lavender flowers.....	D. & O.		.9193	- 3.1°	26.9% Linalyl acetate	
Lavender flowers.....	"Mitcham" (English)	Constituents as above and also cineol.	.8983	- 6.8°	12% Linalyl acetate	
Lemon (9469).....		Citral; citronellol; limonene.	.8524	+58.7°	4.25% Citral (average)	Not completely soluble in 7 to 8 parts of 70% alcohol
Lemongrass		Citral; citronellol; geraniol; methyl heptanone.	.9112		69% Citral	
Mace	Schimmel	Pinene; myristicin; dipentene; myristical.	.9057	+20.3°		
Marjoram.....	Schimmel	Allylisoethiocyanate.	.9017	+15°		
Mustard (artificial) ..	Schimmel	Limonene; linalol; linalyl acetate.	1.0144		100% Allylisoethiocyanate { 18.4% Linalyl acetate 56.1% Linalol	Slight fluorescence in alcohol
Neroli .....			.8790	+11.6°		Soluble in 1 part 95% alcohol, also in 5 parts 90% alcohol
Nutmeg	Metzner & Otto	Myristicic; terpenes.	.8893	+21.4°		
Origanum (Red Imitation)	Schimmel		.8657		10.5% Phenols	
Orange Peel.....	Messina	Limonene; citral; citronellol.	.8450	+95.8°		
Pepper (black).....	Schimmel	Terpenes; sesquiterpenes.	.9016	- 1.1°		
Peppermint		Menthol; menthyl acetate etc.	.9105	-25.5°	{ 11.2% Menthyl acetate 63.8% Menthol total	
Pimenta	Schimmel (from abies pectinaria)	Eugenol; sesquiterpene.	1.0416		85% Eugenol	
Pine	Schimmel (from Pinus Fumillo)	{ Pinene; sylvestrine bornyl- acetate.	.8567	-68.2°	Ester cont. 3.4%	
Pine .....			.8604	- 9.3°	5.2 Bornyl acetate	
Pinus Palustra (Oil of Tar).....			1.0118			
Rose	(Damasceana)	Geraniol; citronellol.		+ 5.1°	{ 2.70% Bornyl acetate 10.4 % Borneol	
Rosemary		Borneol; bornyl acetate.	.8988	+ 2.9°		
Sassafras		Safrol; eugenol; pinene; phellandrene; cadinene.	1.0732			
Santal	East Indian	Santalol.	.9730	-16.8°	96% Santalol	
Spearmint		Carvone.	.9318	-47.2°		
Tansy		Thujone; camphor; borneol.	.9218	+35.7°		
Thyme		Thymol; pinene; cymene; linalol; bornyl acetate; carvacrol.	.9086	- 1.4°	21% Phenols	
Turpentine	(rectified by Schieffelin)	Pinene, etc.	.8655	+12.5°		0.79% residue on evaporation

METHODS OF MANIPULATION.

Sterilization, Series A:—Eight ounce bottles, to which 8 grams of purified talc had been added, and empty 2 ounce bottles—both series loosely stoppered with corks) were heated in an air bath for 2-3 hours, at a temperature of about 130°-140°. This procedure was followed, not to insure *absolute, final sterility* but to obtain *nearly uniform* conditions within the bottles (which had simply been taken from clean stock in our bottling department), i. e. to warrant sterilization before the bottles were actually exposed to the air of the laboratory.

Series B:—No sterilization precautions were taken.

Solutions, Series A:—A solution made up of 1500 grams of *good* commercial glucose (containing traces of H_2SO_4) in three liters of aqueous solution (i. e. enough water to bring the volume to 3000 cc.) was prepared and shaken mechanically to insure homogeneity. The same mixing bottle and cork were used throughout the set of experiments.

Series B:—The solution was prepared by dissolving 18 gm. ext. of beef, 36 gm. peptone and 1800 gm. sugar in sufficient water to make 3600 cc.

Saturated Oil Solutions, Series A:—These were prepared by adding 200 cc. of the glucose solution to each cooled eight oz. bottle (containing the talc.) shaking (on a mechanical shaker for 1 hour) and finally filtering through filter papers taken from two packages kept in the same drawer, under similar conditions and through funnels which had previously been heated and cooled—into the 2 oz. bottles (referred to above). The latter were in all cases (with exceptions which have been recorded) “well filled”—(filled somewhat above the shoulder of the bottle.) One lot of saturated-oil-solution served to fill two 2 oz. bottles—and these were in every case taken as duplicate experiments, bottles marked 1 and 2.

Series B:—Prepared same as series A excepting that no sterilization precautions were observed. Bottles marked 4 and 5.

CONTROLS.

Control tests (employing the methods outlined above and simply omitting the addition of essential oils) were run for each lot and also in series B controls with benzoic acid, the acid being added in excess and the undissolved portion filtered out.

TIME FACTOR IN SETTING UP EXPERIMENTS AND FURTHER PRECAUTIONS.

It was found convenient to run about eleven oils a day, thus making a total of twenty-three bottles, (including the control) and on successive days whenever possible until the series had been completed. In series A the bottles were kept out of direct sunlight—ordinarily in a dark closet. In series B the bottles were placed on a shelf in the laboratory in diffused sunlight.

EXAMINATION OF SOLUTIONS.

The solutions were examined for mold growth, cloudiness, gas formation or other evidence of spoiling at frequent intervals. In several cases the saturated oil solutions showed a slight amount of floating matter—filter paper or traces

of talc that had passed into the filtrate. These could however be generally distinguished from mold growth or cloudiness without much difficulty. In series B many of the solutions showed turbidity without any other signs of spoiling. Believing this to be due to chemical reaction between the oils and the constituents of the solution we have recorded there as negative.

Positive growth of mold or gas formation has been recorded *giving the time elapsing* between date of preparation of test and date when the solution had positively spoiled. Negative results are recorded as (—).

In series A the second bottle (bottle 2) of each test after standing for 30 days was inoculated with a positive growth from a blank that had fermented and had mold growth. In case of positive results the time recorded, in column 3, is that which has elapsed after inoculation.

At the time of the tabulation of results series A has stood for 24 weeks and series B for 8 weeks.

TABULATION OF RESULTS.

OILS, ETC.	SOLUTIONS.				
	SERIES A.			SERIES B.	
	1	2	3	4	5
Almond Bitter.....	—	—	—	—	—
Almond Bitter, no acid.....	—	—	—	—	—
Angelica	1 week	2 weeks	—	2 weeks	2 weeks
Anise	—	—	3 weeks	2 weeks	2 weeks
Bergamot	—	—	3 weeks	4 weeks	4 weeks
Betula	—	—	—	—	—
Cajuput	—	—	—	—	—
Calamus	1 week	1 week	—	2 weeks	4 weeks
Caraway Seed	2 weeks	—	3 weeks	—	—
Cardamom S.....	—	—	—	—	—
Cardamom Mang.	—	—	—	—	—
Cassia	—	—	—	—	—
Celery	1 week	1 week	—	2 weeks	2 weeks
Chenopodium	—	—	—	—	—
Cinnamon	—	—	—	—	—
Cinnamon S.....	—	—	—	—	—
Citral	—	—	20 weeks	—	—
Citronella	—	—	—	—	—
Cloves	—	—	—	—	—
Coriander	—	—	—	—	—
Coriander M. & O.....	—	—	—	—	—
Cubeb 9199	3 weeks	4 weeks	—	2 weeks	2 weeks
Cubeb 9813	1 week	4 weeks	—	—	—
Cumin	—	—	—	—	—
Dill	1 week	—	3 weeks	—	—
Eucalyptus	—	—	—	—	—
Fennel	—	—	3 weeks	—	—
Geranium B.....	—	—	—	—	—
Geranium S.....	—	—	—	—	—
Ginger	—	—	3 weeks	2 weeks	2 weeks
Hedeoma	—	—	20 weeks	—	—
Horsemint	—	—	—	—	—
Juniper Berries	1 week	—	3 weeks	—	—
Lavender Flowers S. No. 1...	—	—	—	—	—
Lavender Flowers M.....	—	—	—	—	—
Lavender Flowers D & O...	—	—	—	—	—
Lavender Flowers M. Eng...	—	—	—	—	—
Lemon 9469	1 week	1 week	—	2 weeks	4 weeks
Lemongrass	—	—	3 weeks	—	—
Mace	—	—	—	—	—

TABULATION OF RESULTS—Continued.

OILS, ETC.	SOLUTIONS.				
	SERIES A.			SERIES B.	
	1	2	3	4	5
Marjoram	—	—	—	—	—
Menthol	—	—	—	—	—
Mustard Art.	—	—	—	—	—
Neroli	—	—	—	—	—
Nutmeg	—	—	3 weeks	—	—
Orange Peel.....	1 week	1 week	—	2 weeks	2 weeks
Origanum	—	—	—	—	—
Pepper Blk.	1 week	1 week	—	2 weeks	2 weeks
Peppermint	—	—	—	—	—
Pimenta	—	—	—	—	—
Pine (<i>Pin. pum.</i>) ..	2 weeks	—	3 weeks	2 weeks	2 weeks
Pine (<i>Abies pect.</i>) ..	1 week	2 weeks	—	—	—
Pine Tar	—	—	—	—	—
Rose	—	—	—	—	—
Rosemary	—	—	—	—	—
Sassafras	—	—	—	—	—
Santal	1 week	3 weeks	—	2 weeks	2 weeks
Spearmint	—	—	3 weeks	—	—
Tansy	—	—	—	2 weeks	—
Terpineol	—	—	—	—	—
Thyme	—	—	—	—	—
Thymol	—	—	—	—	—
Turpentine	1 week	2 weeks	—	2 weeks	2 weeks

Conclusions:—The following act as preservatives: oils of bitter almond, bitter almond no acid, betula, cajuput, cardamom, cassia, chenopodium, cinnamon, citronella, cloves, coriander, cumin, eucalyptus, rose geranium, horsemint, lavender, mace, marjoram, mustard art., neroli, origanum, peppermint, pimenta, tar, rose, rosemary, sassafras and thyme and menthol, terpineol and thymol.

Oils of angelica, calamus, celery, cubeb, lemon, orange peel, black pepper, pinus, pumilio, santal and turpentine do not act as preservatives.

The preservative action of the following is questionable: oils of anise, bergamot, caraway seed, dill, fennel, ginger, hedeoma, juniper berries, lemongrass, nutmeg, pine (*abies pectinata*), spearmint and tansy and citral.

At this writing series B has not been standing sufficiently long to arrive at any definite conclusions as to comparison of results of the two series.

We would take this opportunity of acknowledging the willing and valuable assistance of Dr. Roddie Minor in preparing the solutions.

RESEARCH DEPARTMENT, SCHIEFFELIN & Co., New York, August 10, 1912.

MORE TROUBLE FOR THE DRUGGIST.

One would think that with cut rate, chain store and department store competition, pure food and drugs legislation, drastic city health board ordinances, the Richardson Bill, the Owen Bill, and other restrictive measures in prospect, the retail druggist had troubles enough for one poor mortal.

But it seems that, like Job's boils, trouble no sooner is overcome in one place

than it breaks out in another. As poor Job could not even sit down in comfort, so the retail druggist is given no rest. He is the butt of every drug reformer's censure and is made the scapegoat for everything that goes wrong in medicine or pharmacy.

The druggist is expected to bear all, suffer all in a meek and lowly spirit, while he adheres strictly to high professional ideals, giving no thought to the morrow as to wherewithal he shall be fed or wherewithal he shall be clothed. He must eke out his existence from the filling of prescriptions and eschew all side lines, even if he gets only two or three prescriptions a day and these to be filled by proprietaries, whose virtues have been set forth in glowing colors before the physician by the detail man.

Now on top of all these troubles and tribulations comes the New York Medical Society, aided and abetted by certain members of the New York branch of the A. Ph. A., and seriously proposes to blacklist all druggists who deal in side lines. Only those who confine their business to the filling of prescriptions will be recognized as being worthy of the patronage of physicians.

Mr. Otto Raubenheimer, of Brooklyn, New York, who conducts a drug store that gives some idea of what the cutting out of side lines would mean to the average retail druggist, approves the plan of the New York Medical Society. He said in a recent interview: "My ideas on this are along the same lines as those of Professor Henry Kraemer of the Philadelphia College of Pharmacy, expressed by him in an address at a recent meeting of the American Medical Association.

"I was a delegate from the American Pharmaceutical Association at that meeting. When Professor Kraemer brought out his ideas regarding the differentiation between the two kinds of pharmacists—the one who pays more heed to his side lines than to the careful compounding of drugs, and the one who is heart and soul in the work of preparing medicines, I told him that we in Brooklyn and New York had already made a step in that direction.

"I told him that there had been a committee appointed here, consisting of ten men from the county medical association and ten from the New York Branch of the American Pharmaceutical Association, to take up this matter.

"By the establishment of 'certified' pharmacies physicians would know whom to trust with the compounding of their prescriptions, especially when in a part of the city far from their homes. Some such plan of certification ought to be worked out."

When the members of the New York Medical Society have completed their list of good and bad pharmacists, it might be in order for the retail druggists of Greater New York to get together and make out a list of good and bad physicians. They have quite as much right to do this as the doctors have to classify the pharmacists, and "it is a poor rule that won't work both ways."

There is lying on our desk now a circular letter from a New York physician offering to pay commissions on cases of venereal ailments sent him by druggists.

Would it not be the better part of wisdom and discretion for both professions to cease meddling with the business of each other? Each has its own sphere into which the other has no right to intrude. Let each obey the laws governing its practice and there will be no good reason for either to complain of the other.—

The Voice of The Retail Druggist.

THE JOURNAL OF THE
CERTIFIED PHARMACIES.

As the demand for a high-grade milk has given us "certified" milk, so the demand for high-grade, competent and reliable pharmacies—pharmacies where a physician may send his prescriptions with the assurance that they will be compounded conscientiously—promises to lead to the establishment or recognition of "certified" pharmacies. The pharmaceutical profession no less than the medical profession has long recognized that many who are licensed to conduct a "drug store" are not equipped to compound prescriptions. While it is generally conceded that the amount of real drug business is not sufficient to furnish a livelihood for more than an extremely small portion of those engaged in it, there is an opportunity for a limited number to conduct high-class pharmacies, and many schemes have been proposed for establishing some sort of dividing line between ordinary drug stores and real pharmacies.

The plan of examining pharmacies and issuing licenses to those which meet the requirements, urged by M. I. Wilbert some ten years ago, was recently again proposed at a joint meeting of the Medical Society of the County of New York and the New York branch of the American Pharmaceutical Association, and it was decided that a committee to consist of ten members from each society should draw up regulations or requirements for the "certification" of pharmacies."

At this meeting one of the speakers made the point that a physician knows the reliable pharmacies in his own neighborhood but is entirely at sea when away from home, and that there should be some method of certifying to pharmacies at which physicians can have absolute confidence that their prescriptions will be compounded correctly and with the skill and care of the properly trained pharmacist whose business is conducted in accordance with medical and pharmaceutical ethics.

While the establishment of requirements for such certifications should be carefully considered, the need of a dividing line between the druggist whose energies are chiefly devoted to the sale of cigars, chewing-gum, soda-water and patent medicines, and the pharmacist to whom one may safely entrust the compounding of prescriptions is so urgent that we shall look forward to the outcome with much interest. We are reminded at this time that physicians have long attempted through consultations and discussions—generally informal—to gain information regarding the qualifications of pharmacists in the various parts of the town or city in which they practice.—*Journal A. M. A.*

TWO KINDS OF PHARMACIES CAN SUCCEED.

Has it ever occurred to you, dear reader, that we could have two kinds of pharmacies in this country and have them both successful? Suppose we had a standard for such stores as desired to fill physicians prescriptions, these stores to be known by some readily recognizable sign, prominently displayed for the benefit of the public, this class of store to be known as a "Prescription Pharmacy" and its medicines to be "certified" as being absolutely right for human consumption,

physicians to have a list of these stores posted conspicuously in their offices, and patients told to go to any one of them they chose—naturally the nearest one.

The certification of these stores would be under the control of the State or National Board of Pharmacy, and possibly a fee would be charged for examination. Inspectors would be free to come and go in such places, much as they do in examining National Banks, and no pharmacist would be allowed to maintain his license or fill prescriptions who failed to live up to the requirements of the Board of Examiners.

The second class of stores would be known as "drug stores," and would have the right to sell drugs and chemicals and everything else they pleased. In other words, they would be merchants running large or small department stores, depending on location, etc. They might even be allowed to have a prescription department, but the chances are the requirements would be so strict that the "drug store" would gladly turn this portion of the business over to the "certified pharmacy."

Now, we know what you are going to say. You rise to remark that a scheme of this kind is not new; that it has been in vogue for years in Europe and that it is not applicable to this country because we cannot have the same guarantee of protection of territory in this "land of the free" as the pharmacist abroad has. True, but nevertheless we believe the plan as outlined would work satisfactorily in the United States.

If the "department pharmacy" would give up its prescription department, and add, say a floral department, in its stead, and the "prescription pharmacy" would give up its sundries (aside from those belonging to a prescription store) would not both be better off? Think of the worry off the mind of the fellow who hates the prescription business anyway and wishes he had never seen a prescription; also the care off the shoulders of the ethical cuss who hates to sell candy and cigars, but feels he has to, to make a living.

A plan of this kind would hardly be applicable to the country stores, but we believe some such scheme is feasible for all towns of 10,000 inhabitants and over.—*Pacific Drug Review*.

PHARMACY A COMMERCIAL PROPOSITION.*

WILLIAM A. HOWE.

The writer, after fifteen years' work as proprietor of a drug store, has come to the conclusion that pharmacy is not so much a profession as it is a purely commercial proposition, with long hours to work, and sometimes, for small profit.

From my own experience and what I have seen in a limited way, there seems to be something radically wrong in the conditions surrounding the practice of pharmacy. We all know it is almost impossible to get good registered clerks at salaries which the ordinary store is able to pay. Neither can we blame the

*Read before the O. S. P. A.

clerks for going into other lines of work for which they receive oftentimes a better salary for less hours' work, and incidentally have time to get acquainted with their families.

From a financial standpoint, the best drug stores today are the ones which have the best business management, together with a large number of good paying side lines.

By the best business management I do not mean simply good buying at low prices; while this is essential, it is not all that is necessary by any means. To do a successful and profitable drug business, quite a number of other things are essential besides good buying.

Every live druggist should take time to be an active member of the Business Men's Club, Chamber of Commerce or other organization representing the business men of all lines in his city. He should be a booster for anything for the good of his home town, either for bringing in new business or for making it a better city in which to live. Don't be a stranger to your own competitors or the other merchants, but meet with them and discuss trade conditions. Let them know you are alive and interested in any of the good things they are doing. More than this, when the occasion arises, help them with your money to the extent of your ability, and by all means give cheerfully when you do give.

WILL THEY FIGHT?

The United Kingdom is a big attraction for American manufacturers of proprietary medicines. The latest to come to us are those who offer their goods upon some plan in which cooperation or profit-sharing is held out as the feature. "Rexall" came to us about a year ago, and the fact was not ignored by their competitors in the United States, who were not slow to realize that if there is anything here for "Rexall" there might also be for them. So now we have "Nyal" proprietaries offered to the trade. "Nyal" (New York and London) have made a beginning in Ireland, where they are not bothered with medicine-stamp duty nor with National Insurance Act medical benefit. So far British manufacturers and wholesalers have not worried themselves about these cooperative or profit-sharing ventures, but it is just as well that we should note that another bird from the eagle's brood has come to our shores. In the past some of these high fliers have come to stay.—*The Chemist and Druggist*.

Papers Presented to Local Branches

THE NEW HOUSE OF DELEGATES OF THE A. PH. A.*

JOSEPH W. ENGLAND.

Probably one of the most important forward steps ever taken by the American Pharmaceutical Association was the formation of the House of Delegates at the recent Denver meeting. It was created by resolution and not by by-law. Its functions are distinctly limited; it may become a very important factor in the work of the Association and be given larger powers, or it may fail to meet the needs of the Association and be abolished. Although of the same name as that of the governing body of the American Medical Association, its powers and duties are radically different.

Originally, the American Pharmaceutical Association was a delegate-body, delegates being sent by colleges of pharmacy and pharmaceutical organizations to the annual meeting, the thought being that by making the Association an association of delegates the cities would be encouraged to form local organizations; but later it was feared that the Association might become subject to the control of local organizations, and it was thought best to be independent of all local bodies, so individual membership was made dominant. Strange to say, however, while the delegate system as the controlling power of the Association was abolished the system itself was continued, but with the delegates having no duties to perform. Hence, the attendance of delegates, for many years, has been perfunctory. It is true that many of the delegates exerted, as individual members, an important influence in the councils of the Association, but it was felt that this influence could be more widely extended and made potential for the good of the Association, if the delegates were given specific duties.

The membership of the House of Delegates will consist of three regularly elected or appointed delegates from Local Branches of the American Pharmaceutical Association, State and Local Societies, Colleges and Schools of Pharmacy and delegates from the National Association of Retail Druggists, National Wholesale Druggists Association, American Medical Association, National Association of Boards of Pharmacy, Women's Organization of the National Association of Retail Druggists, National Association of Manufacturers of Medicinal Products, American Chemical Society, Association of National and State Food and Dairy Departments, Association of Official Agricultural Chemists, and from the departments of the Army, Navy and Public Health and Marine Hospital Service, the American Association of Drug Clerks, the credentials of whom shall all be approved by the Council; together with five members of the Council, appointed

* Read before the Philadelphia Branch A. Ph. A.

by the Chairman of the Council. The President, President-elect, Treasurer, General Secretary and the Chairman and Secretary of the Council shall be members ex-officio.

With such a widespread membership in the House of Delegates there is danger that the body may become unwieldy, and also, that outside interests may dominate the interests of the Association. The first danger can be readily met, if it should occur, by reducing the number of delegate-representation from three to two or one; and the second, by the fact that a majority of the delegates will probably be in the future, as they have been in the past, members of the Association.

The elected or appointed delegates hold office for one year, or until the credentials of their successors shall have been approved by the Council.

Each delegate is entitled to one vote. No delegate shall act as the proxy of another delegate who has been seated nor as delegate for more than one Association, organization or institution. Any member of the Association may attend any session of the House of Delegates and has the privilege of the floor.

The first session of the House of Delegates at each annual meeting will be called to order by the Chairman or one of the Vice-Chairmen, or the Secretary of the preceding House; or, in the absence of all of these, by the Secretary of the Council.

The House of Delegates will exercise the following functions:

1. To receive and consider the reports of delegates from the bodies which they represent in the House of Delegates.
2. To consider and report upon such resolutions, and upon such other subjects as may be referred to the House of Delegates by the Council, by the Sections or by the Association in general session.
3. To make a final report of the business transacted to the final session of the outgoing Council at each annual meeting.
4. To adopt all rules and regulations necessary to the proper conduct of its business and not inconsistent with the Constitution and By-laws of the Association and the Council.

It should be noted that the House of Delegates can exercise only such functions as have been specified, or may be hereafter specified by the Council. It can either initiate resolutions, or it can consider and redraft those referred to it by the Association, Sections or Council. It is in effect, a clearing house in which resolutions can be referred and proposals moulded into shape for consideration by the Council—which still remains the executive body of the Association—and which, in turn, reports to the general assembly. In this way, questions can be fully and thoroughly discussed before the House of Delegates, both by delegates and members, and the business of the Association, Sections and Council expedited.

The House of Delegates will be, also, the connecting link between the colleges of pharmacy and pharmaceutical organizations and the Association whereby cooperation and coordination of work can be secured. When delegates are appointed to attend meetings of a delegate body they naturally bring with them the wishes

of the bodies they represent, and when they return they carry back the results of their deliberation.

In this way there can be closer connection in work and reciprocal action, and the Association can better represent the interests of the whole country, and be, in effect, what it should be, a more truly representative national organization.

As one of the local branches, the Philadelphia Branch of the American Pharmaceutical Association, is entitled to and should send three delegates to the next annual meeting at Nashville in 1913, and the writer would suggest that the by-laws of the Branch be amended to provide for the selection of such delegates.

THE PHARMACIST'S DUTY TO HIS PROFESSION.*

A. G. ERKEL.

As you all know, the State Association claims a sort of parental relationship to the college, since it was the chief agency that induced the Regents to add the college to the university. The association was largely responsible for the first appropriation of \$5000 for the college in 1891. This committee therefore, is the connecting link between the college and the association. Its chief function, I take it, is to point out to the association and to the pharmacists of the Northwest what the relationship between the college and the association should be. In taking such prominent part in the establishment of the college, the association must have had in mind the great value which an educational institution of high rank would be to the profession. The inevitable inference is that the association would utilize such an institution to the utmost. The profession and the association, except a comparatively few of the more progressive individual pharmacists, have been more or less indifferent to the advantages which the college affords the calling. The standard of pharmacy, like that of any other calling, is determined largely by the standards of the individuals composing it. It can be said without fear of successful contradiction that pharmacy in Minnesota has not developed as rapidly as it could have done if it had used to the fullest the advantages and opportunities offered by the college. The number of graduates and the number of students in attendance are not at all commensurate with the numbers practicing pharmacy. This is due to a short-sightedness on part of the pharmacists who do not insist upon a sufficiently adequate training for their apprentices and clerks. They do not sufficiently appreciate the fact that their calling is a trust in their hands upon which they as trustees are bound to administer according to the duties which this trust imposes. Most pharmacists are delinquent in that they do not recognize any duties toward the profession at large. They do not look upon the profession as something concrete made up and determined by the individual members and so lose sight of their responsibilities in this respect. Every pharmacist is doing all he possibly can to improve his own conditions, but what is he doing to improve

* Read at the June meeting of the Northwestern Branch of the American Pharmaceutical Association.

the conditions and standard of the calling of which he is a member? The duty of the pharmacist lies in two directions—first, to himself; second, to his calling. It must be obvious to those who give the matter even little thought that most progress is mental and intellectual and that, therefore, the standard of a calling is determined by the standard of the educational requirement placed upon the members of a calling. Here we have an educational institution of the university grade, rated as among the first in the country, and yet how few pharmacists are using it. It is a fact that many of the students in attendance at the college have not been sent by pharmacists—a few are in attendance against the advice of some pharmacists. It is on account of this indifference and near-sightedness on part of pharmacists that the medical and dental professions have long ago distanced us. Their growth and development have been along educational and qualitative lines. *Measured by the value of the service which the medical, dental and pharmaceutical professions render the state, the standard of pharmacy should be nearly that of medicine and far in advance of dentistry.* That this is not the case is entirely the fault of pharmacy itself. Medicine and dentistry guard their standards jealously; pharmacy is indifferent about its standard. Is there any wonder that pharmaceutical conditions are not improving more rapidly and that some of our best qualified pharmacists are leaving the ranks? Now what is one of the specific duties of every pharmacist? *It is that he send his apprentices and clerks through the College of Pharmacy or that he insist that his clerks be graduates.* If every pharmacist would do this, in ten or fifteen years pharmacy would be holding its rightful position among the honorable professions. How many of our pharmacists are going to rally to the standard?

REPORT TO THE WASHINGTON BRANCH, A. PH. A. UPON THE 1912 CONVENTIONS OF THE N. A. R. D. AND THE A. PH. A.

WILLARD S. RICHARDSON.

The N. A. R. D. convention held in Milwaukee during the week of August ninth was in many respects the most important ever held by that organization. Registration was much in excess of the thousand mark, and at all the sessions there was a large, enthusiastic, working attendance of delegates. All seemed to fully realize that they were delegates actually representing the national retail drug interests, and there was greater earnestness and broadness than I have ever before witnessed. The efforts to better the condition of the trade were not only sincere; but there was a frank and fair acknowledgement of the betterments already effected.

All the deliberations showed the N. A. R. D. to be a clean, independent organization of retail druggists exclusively; capable of fully caring for the interests of the retail trade; willing at all times to openly and sincerely cooperate with allied interests, without in any sense being subservient to them.

In connection with the U. S. P. and N. F. propaganda there was evidence of considerable progress; especially in those sections and places where the local as-

sociations had used real effort; had cooperated with the parent organization, the N. A. R. D., instead of simply leaning upon it. There was ample evidence that all the claimed purposes of the propaganda were attainable; in considerable measure had been attained, and that the druggist who would intelligently use all the literature and other helps supplied by the N. A. R. D. would help the physician to a higher and more effective plane of practice; protect the suffering public from many nostrums; make the druggist more truly worthy of the name of "pharmacist," and at the same time so add to his profits as to stamp him worthily as a business man.

Legislation was one of the leading issues, in fact, it may be said to have been the issue. It was appreciated that no difference what part of the general issue of the Association might be taken up, "To make the drug business pay better," that wherever better business was sought, whether it be through the betterment of qualities, prices, or service, the desired betterment could rarely be accomplished without the repeal, amendment, or enactment of some law.

The courage of the N. A. R. D., a courage common to it and the A. Ph. A., had been fully evidenced by the high and cooperative stand taken by the organizations in their attitude toward pure drugs, and anti-narcotic legislation.

In the vital question of protection of retail prices, the spirit of the convention was that the demands for protection from both producers and wholesalers should be continued, that plans already evolved should be thoroughly tested, and that no weapon now at hand should be neglected. However, the greatest confidence and the highest encouragement was that price protection in its broad sense has become a national issue, a part of the so called "Trust" issue; that general opinion concerning it is rapidly changing, and that the prospects are bright for such changes in the Sherman and other laws as will enable druggists, as well as all other classes to protect their living profits with the direction and sanction of the laws.

A great deal that has been said of the N. A. R. D. Convention applies with equal force to the A. Ph. A. Convention held in the beautiful sky-land city of Denver during the week of August sixteenth. Thirty-eight States were represented by those in attendance, surely a remarkable showing; an absolute proof of the deep interest taken by the members in this venerable and still youthfully vigorous organization. It was quite noticeable to those who were accustomed to pharmaceutical and drug meetings that the A. Ph. A. men were in their seats and ready to open the sessions with a promptness and parliamentary precision quite unusual in such gatherings. Also there was a breadth in the manner of taking up work that was most encouraging, the same active interest being shown in such questions as legislative matters that were purely commercial, as in strictly professional questions such as higher educational qualifications for pharmacists.

In the matter of higher educational qualifications for pharmacists, it seemed to be the general sentiment that nothing radical should be done. The very word "education" in itself suggests that the elevation of standards must be conservatively and steadily progressive; that the pharmacal thought must be educated to a general desire for higher mental measures for graduates or registered men.

The belief was generally expressed that even a higher qualification was in a large measure a matter of legislation, it being evident that there is not only need

of legislation to elevate the states severally; but that there is need for national laws to regulate exchange of certificates, and establish national standards.

It was also shown that legislatively the druggists must act conscientiously upon the old saying that "what is good for the buyer is good for the seller;" that is to say, the conservation of our own interests must and only can follow the conservation of the interests of the consumers. If we would not be defrauded we must not in any way be conscious parties to fraud, whether the fraudulent thing be put in and to pass through our hands as mere merchandise, prescription drugs, or dispensing specialties.

The legislative work of both the A. Ph. A. separately and in unity was pointed out as having placed much actual accomplishment to the credit of the sister associations, and I suggest that all interested persons should read the reports of the Legislative Committees of the associations.

Perhaps the most notable event of the meeting was the creation of what is to be known as "The House of Delegates." Under it, the position of delegate from any state, local, or allied organization will be clearly defined. The House of Delegates will be a sort of crucible; a melting pot to take the many resolutions, suggestions, and general new business and refine them, reduce them to practical, brief and lucid form so that the general body may act upon them with both speed and intelligence.

The retiring officers of both associations deserved and received the thanks of those whom they had so well served, to them and the equally energetic incoming officers it was freely acknowledged that the acceptance of office from either association was the taking up of a burden for which there was no reward of substance, and yet the greatest of all rewards: grateful love from their fellow men.

DIGNITY IN BUSINESS.

Dignity is a fine thing in its proper place. The druggist probably has a little more reason for being dignified than the cobbler has, but if a man is going to be dignified he must not feel offended if people do not warm up to him very much. Dignity is a good deal like a big snow bank, a fine thing to look at as it glistens in the sunshine, but not a thing that anybody wants to mix up with very much. If you are going to be dignified, save your dignity for proper times and occasions, and don't let it get in the way when you are selling goods or visiting with customers. You can't make any friends for the store by showing that you feel a little above the ordinary business plane. When you get to feeling above the people whose money you are after, you will find that they will squeeze their money a little tighter than they did before you developed that snow-bank quality.—*The Spatula*.

Report on the Progress of Pharmacy

For the Year 1912

(Fifth Installment.)

Digitalis: Resume of the Active Constituents of Leaves and Seed.—In an address delivered before the "Rostock Apothecaries Society," Prof. Kobert gave the following interesting resume regarding the active constituents of digitalis:

The leaves and seeds of *Digitalis purpurea* and *Digitalis Grandiflora* contain glucosides of the digitalin-group as well as glucosides of the saponin group—the leaves containing the active substances, digitoxin, digitophyllin and gitalin, together with the inactive saponins gitalin and digitsaponin, while the seeds contain digitalin and gitalin, of the digitalin-group, together with the active saponins digitonin Schmiedberg and digitonin Kiliani. Besides these well-defined substances, digitalis contains some enzymes, the composition of which has not yet been thoroughly investigated, but of which it is known that they possess oxidizing and hydrolyzing action upon the glucosides and thereby reduce their activity. Furthermore, it has been found that manganese is a constant associate of these enzymes (also called oxydases), and that thereby the leaves of the yellow variety of foxglove (*Digitalis grandiflora*), containing less manganese than those of the red variety (*D. purpurea*), are correspondingly less susceptible to this decomposition. To a certain extent protection from this change is afforded by properly and quickly drying the fresh leaves; but this is not always practicable in the case of wild growing digitalis, the leaves of which do not at once reach the pharmacist after collection, and have frequently undergone change before they are delivered. The final products of the decomposition of the three active cardiac glucosides, namely gitalin, digitoxin and digitalin, are considered, aside of the glucoses split off by their hydrolysis, to be completely

inactive, and consist of the so-called digitoxigenin and digitaligenin.

Of the active substances of digitalis leaves—digitoxin, digitophyllin and gitalin—only the last named, gitalin, is represented in the infusion, into which it passes along with digitsaponin, so that digitalis leaves, even when extracted thrice successively with boiling water, do not lose their activity completely. But inasmuch as the infusion of the leaves possesses extraordinary salutary properties, it is demonstrated that gitalin must be considered by the practicing physicians as being the most important component of the drug. In a chemically very impure condition it has heretofore been supplied under the name of "digitalein," but it is now only a question of time when it will be available in a chemically pure form. Prof. Kobert recommends, in order to utilize the activity of the leaves completely, that the administration of the infusion be alternated with a dose of digitoxin, and that similarly the activity of the seeds may be secured by alternately administering solution of gitalin and digitalinum verum Kiliani.—Pharm. Ztg. LVII (1912), No. 59, 597.

Plant Specimens: Preserving and Mounting.—William Huren demonstrated before the Botanical Society of Western Pennsylvania a simple and effective method of preserving plant specimens which will revolutionize the present slow and laborious mounting of herbarium collections. The fresh specimens are subjected to process of drying by means of steam, cold air and a press, which preserves their natural color. After this they are imbedded or inlaid on a soft surface, as blotting paper, cardboard, silk, etc., and a final protective coating of liquid celluloid is applied. The specimens thus finished retain their natural color, resemble paintings and are prac-

tically indestructable.—*Sc. Am.*, 1912, VI. 107, 10.

O. R.

Powdered Drugs: Commercial Quality of Some of the More Important Drugs.—Henry G. Greenish and Miss Dorothy J. Bartlett have examined a large number of samples of powdered drugs of commerce, comprising thirty-three of gentian and eleven each of nux vomica and ipecacuanha, and describe the methods and results in a lengthy paper read at an evening meeting of the Pharmaceutical Society of Great Britain. The results, which were obtained both by chemical and microscopical methods, show that

Commercial Powdered Gentian still leaves much to be desired. Intentional adulteration with foreign vegetable powders still continues. Carelessly cleaned root is ground to powder, and a large proportion of the samples are deficient in water soluble substances.

Powdered Nux Vomica of commerce is of satisfactory quality. All the samples had normal microscopic characters, and contained alkaloid ranging from 2.38 to 2.80 per cent. This is particularly gratifying in view of the fact that the powdered nux vomica of French commerce has recently been found to be frequently adulterated with ground olive stones and with raspings of ivory nuts.

Powdered Ipecacuanha of commerce was not quite so satisfactory, although with one exception they contained sufficient total alkaloid to comply with the recommendation of the Committee of Reference in Pharmacy. Two of the samples were not quite pure, one was probably Cartagena ipecacuanha and one other was not ipecacuanha at all—possibly supplied by mistake, however.—*Pharm. Journ. and Pharmacist*, February 17, 1912, 201-203.

Coptis Root: Source and Constituents of Two Kinds Used in India.—David Hooper states that coptis root, as used in India, is obtained from two sources. The first is collected in the Mishmi Mountains northeast of Assam, and is derived from *Coptis Teeta*, Wallich. The second kind of root is imported into Bombay from Japan and China, the latter probably being derived from *Coptis Teet*, var. *Chinensis*, while it is conjectured that the Japanese drug is the root of *Coptis anemonaefolia*, Sieb. et Zucc. There are slight differences between the two kinds of drug met with in the Indian baraars. "Mishmi tita" from Assam is a yellowish-

brown rhizome, as thick as a quill or larger, having wiry rootlets or spiny projections where they have been broken off; the rhizome is jointed and frequently contorted, at the upper end of the joints become more marked, and one or more stem-clasping petioles often remain attached. A transverse section shows a thin brownish-yellow bark, with bright, orange colored, waxy segments of wood. The overseas drug brought to Bombay is more slender, of a light brown color, with fewer wiry rootlets; the rhizome often branches at the crown into two or three heads, which terminate in tufts or leaf-stalks crowded together and not separate as in the Assam drug. A transverse section shows a thick brown bark, with dull, yellowish-brown waxy segments. Both roots are extremely bitter and communicate a yellow color to water.

The Assam drug is the kind preferred and commands a much higher price than the Bombay drug. The drug has been analyzed by J. Dyson Perrins as far back as 1862, who reported a yield of 8½ per cent of berberine in a sample derived from *Coptis Teeta*. This statement has remained unchallenged during all the years since, and Mr. Hooper has therefore subjected samples of the drugs from Assam and from Bombay to chemical examination, with the following results:

	Assam	Bombay
Moisture	8.9	7.7
Ash	3.1	3.3
Alcoholic Extract	17.95	17.30
Resin	1.5	2.7
Berberine (as iodide).....	7.63	7.17
Berberine (as hydrochloride) ..	8.6	8.3

The alkaloid was determined by calculating from the absolutely dried iodide, $C_{20}H_{17}NO_4$, HI, and the air-dried hydrochloride, $C_{20}H_{17}NO_4$, HCl, $2H_2O$. While the analysis points to the Assam root as a slightly better drug, it does not warrant any serious difference being made between the commercial valuation or medicinal reputation of the two kinds.—*Pharm. Journ. and Pharmacist*, April 13, 1912, 482.

Euonymus Atropurpureus: Chemical Examination of the Root-Bark.—A resumé of the literature showing that with the exception of dulcitol no definite constituent has heretofore been isolated from "Wahoo" bark. Harold Rogerson has made a complete

chemical examination of the drug and summarizes his result as follows:

The material employed consisted of the root-bark of *Euonymus astropurpureus*, Jacquin. An alcoholic extract of this material when distilled in a current of steam yielded an amount of a pale-yellow essential oil equivalent to 0.01 per cent of the weight of the drug.

The portion of the extract which was soluble in water contained a quantity of dulcitol (m. p. 186-188°) amounting to 2.09 per cent of the weight of the drug; a new acid, $C_8H_8O_3$ (m. p. 121-122°), which evidently is furan-B-carboxylic acid; a new crystalline alcohol, $C_{21}H_{36}O_4$ (m. p. 248-250°), which possesses a bitter taste, and has been designated euonymol; and a sugar, which yielded d-phenylglucosazone (m. p. 208-209°), together with small amounts of coloring matter.

The portion of the extract which was insoluble in water consisted of a dark brown resin, amounting to 3.2 per cent of the weight of the drug. From this resin the following substances were isolated: Three new alcohols, namely, euonysterol, $C_{31}H_{54}O.OH$ (m. p. 137-138°), homo-euonysterol, $C_{30}H_{50}O.OH$ (m. p. 133-134°), and atropurol, $C_{27}H_{44}(OH)_2$, melting at 283-285°; citrullol, $C_{22}H_{38}O_2(OH)_2$ (m. p. 285-290°), which has previously been obtained from colocynth (J. Chem. Soc., 1910, 97,102) and a mixture of fatty acids consisting of palmitic, cerotic, oleic, and linolic acids.

In the course of this investigation no product could be obtained corresponding to the "euonymin" of Wenzell or of Schmiedeburg, and, moreover, no evidence of the presence of any glucosidic substance in the bark.—Pharm. Journ. and Pharmacist, May 25, 1912, 689; from Communication of the Wellcome Research Laboratories.

Fagara Xanthoxyloides, Lam.: *Chemical Constituents of the Fruits*.—Having recently received from German Toga a quantity of the root, bark, and fruit of *Fagara Xanthoxyloides*, Lam, which are used there as a remedy for diseases of women, Prof. H. Thoms, assisted by his pupil, H. Priess, has subjected this material to chemical examination. From the fruits a volatile oil was distilled, which was found to contain dipentene, methyl nonylketone, caproic acid, acetic acid (in the form of an ester), linalool, a sesquiterpene, and a crystallisable

substance of the formula $C_{12}H_{16}O$. This crystalline substance was found in larger quantity in the residue left after the distillation had been completed; it proved on examination to be a powerful fish-poison, and was therefore named xanthotoxin. Xanthotoxin melts at 145°-146°, is a lactone, and contains a methoxy-group. Further investigation showed that it was not only isomeric with bergapten, but contained the same groups of atoms. It is, however, a pyrogallol derivative yielding pyrogallocarboxylic acid, $C_6H_2(OH)_3COOH$ (1, 2, 3, 4) when carefully fused with caustic potash, whereas bergapten is a phloroglucin derivative. From the constitution of xanthotoxin, as indicated by the chemical composition and behavior, it must be regarded a methoxyderivative of cumarin-cumarone-pyrogallol. The constitution of bergapten is not yet definitely known, but the author is now engaged in attempting to elucidate its constitution.—Pharm. Journal and Pharmacist, Jan. 13, 1912, 29.

Gelsemium: Aesculin not a Constituent.—O. Tunmann having proposed a method for the detection of aesculin by micro-sublimation, which he considers specially adapted to the identification of gelsemium, mentioning that aesculin under the conditions of this test does not behave as it does under the conditions of an ordinary chemical experiment, Frank Tutin has made and describes experiments which prove the fallacy of Tunmann's assumption that the sublimate consists of aesculin and that in fact, the sublimate obtained consists of scopoletin (=Aescularin 5-methyl ether), which is the fluorescent principle in gelsemium. In consideration of his doubts based on a number of facts mentioned, Mr. Tutin determined the behavior of anhydrous aesculin, aesculetan, scopoletin, and finely ground gelsemium on heating. Small quantities of these materials were placed in small, thin glass tubes, the open end sealed, and the substances simultaneously heated in a metal bath, the temperature of which was recorded by a thermometer placed in the liquid. At 140° the scopoletin just commenced to sublime, and at 150° a distinctly crystalline sublimate was obtained. The temperature was then raised to 170°, at which point it was kept for several hours. The scopoletin then sublimed fairly rapidly, yielding almost colorless, well-formed crystals. The gelse-

mium also yielded a small sublimate, which was, for the most part composed of crystals of scopoletin. The aesculetin remained unchanged. The temperature was then raised to 210°, and again maintained several hours. The scopoletin fused, and sublimed rapidly; the gelsemium yielded a further sublimate, largely a tarry matter; aesculatin slowly sublimed in pale yellow crystals; the aesculin was decomposed, giving a further sublimate of tarry matter, together with crystals of aesculatin, the identity of which was proved by the melting point (264°).—Phar. Journal and Pharmacist, Feb. 10, 1912, 157; from Wellcome Chem. Research Publication.

Gum Thus or Canadian Olibanum: A Substitute for Olibanum—Karl Dietrich reports on an American substitute for olibanum, which comes into the drug market from Hamburg. Its M. Pt. is 77-78°. The following are its constants as compared with Resina Pini and Terebinthinae.

	Acid Number.
Gum Thus	145.65 to 146.03
Pine Resin	105 to 160
Turpentine	194 to 144
	Saponif Number.
Gum Thus	169.19 to 170.78
Pine Resin	150 to 190
Turpentine	108 to 179

The yield of oil of turpentine is as follows:

Gum Thus	9-10 percent.
Pine Resin	3- 4 percent.
Turpentine	20-25 percent.

Consequently Gum Thus occupies a place about midway between Resina Pini and Terebinthina. The conclusions reached are that Gum Thus is a valuable American Pine resin, which however, contains no gum and therefore is not a gum resin.—Ph. Zhalle 1912, No. 24, 652-654. O. R.

Black Mustard Seeds: Alleged Deficiency in Myrosin.—As well known, black mustard seeds contain a glucoside, sinigrin, and an enzyme, myrosin—the latter acting upon the sinigrin in the presence of water, decomposing it with formation of volatile oil of mustard (allyl isothiocyanate). The statement has been frequently made that these seeds do not always contain sufficient myrosin to decompose all the sinigrin they contain, and that, to effect this, white mustard seeds,

which contain an excess of myrosin, must be added to them. Prof. Henry G. Grunich in collaboration with Miss Dorothy J. Bartlett, has now made a comprehensive series of experiments, to ascertain to what extent, if any, this statement is correct, and as a result of their experiments, which are described in detail, they have arrived at the following conclusions:

(1) That in all black mustard seeds examined there is sufficient myrosin to decompose all the sinigrin present.

(2) That in two of the samples examined there is sufficient myrosin to decompose a much larger quantity of sinigrin than the seeds themselves contain.

(3) That, if properly preserved, black mustard seeds retain their myrosin for many years.—Pharm. Journ. and Pharmacist, Feb. 17, 1912, 203-205.

Psoralea Corylifolia: Chemical Examination of the Seeds.—Ernest W. Mann and R. E. Griffiths report the results of a chemical examination of seeds of *Psoralea corylifolia*, a plant growing as a common herbaceous weed over a great part of India, where the seeds have found some medicinal use. By steam distillation and extraction of the distillate with ether and petroleum spirits, about 0.2% of an oil and crystalline substance was obtained, having a marked heavy aromatic odor, the aqueous portion of the distillate giving a slight reaction for aldehyde by Schiff's test. By direct extraction of the powder 13.7% of a thick brownish oil was obtained. By extraction with alcohol 37.2% of a brown, thick extract was obtained, which, after extraction and washing with petroleum spirit, resolution on alcohol, and precipitation by pouring in water, yielded a resinoid amounting to 9.2 percent. of the seeds. This resinoid was practically entirely soluble in ether, chloroform, and in ethylacetate; but by treatment with ethyl acetate it was possible to divide it into two portions—the one insoluble, the other of an acid nature passing into solution. An inconsiderable trace of alkaloidal matter was obtained from the seeds by direct extraction with Prolli's fluid.—Pharm. Journ. and Pharmacist, Feb. 24, 1912, 260.

Storax: New Method of Examination.—Dr. C. Ahrens recommends and describes in minute detail a method for the examination of storax which depends upon the solubility

of its essential constituents in petroleum benzin. The petroleum-benzin extract, carefully dried to constant weight according to specific directions, is a light yellow, very thick liquid product, having an agreeable odor, and strong refractive power. Adulteration with colophonium, if in large quantity, is recognized by the darker color and the odor of the extract, and the loss of its fluidity. The author gives directions for determining the acid and saponification values of this extract, but does not mention the percentage of extract yielded by normal storax, nor give the actual constants observed. He has made a series of examinations of commercial samples of Storax and believes the method to be useful for detecting adulterations.—Pharm. Ztg. LVII (1912) No. 65,655; from Ztsch. f. öff. Chem. 1912, No. 14.

Strophanthus Courmontii: Relative Toxicity, Therapeutic Action, etc., of the Seeds.

—Dr. Gordon Sharp describes some pharmaceutical experiments made with tincture prepared from the seeds of "Mandala Strophanthus" (*S. courmontii*, Saccl., var. *Kirkii*) in the same proportions as the B. P. tincture. While the active constituents of this variety of strophanthus is not definitely known, it is almost certainly a glucoside related to strophanthin, but perhaps more nearly to ouabain (pseudo-strophanthin), the glucoside yielded by *Acokanthera schimperi*, A. DC., and by the Gaboon arrow poison. The experiments have demonstrated that while the lethal doses for frogs needs to be three or four times that of *S. Kombi*, the therapeutic dose of the tincture for man need not be more than three-fifth larger than that prepared from the official seeds. The author does not doubt that in early days, when Strophanthus was new to practice, many of the successful results were obtained from tincture made from these seeds, and his present investigation shows that the seeds of *S. courmontii* are far from inert.—Pharm. Journ. and Pharmacist, Feb. 10, 1912, 161-162.

Leeches: Method of Preservation.—

While the demand for leeches (*Sanguisuga medicinalis*) is modernly comparatively rare, in some localities pharmacists are not infrequently called to supply them. Theissen therefore makes some timely suggestions respecting the method of preserving them in

a healthy condition, which are so simple that they can be readily carried out without occasioning trouble and with the apparent probability of avoidance of loss. The vessel containing the leeches should be kept in a cool place, accessible to fresh air, and as remote from the fumes of acids and the vapors and emanations of the drug store; nor will it suffice to place them in the cellar, however cool this may be. The animals themselves should never be touched until required for use, and then only the particular leech and with the hands previously well washed and wiped. The container of glass should be provided with a layer of peat-mold and a small amount of fresh water, and, the leeches having been introduced, it should be tied over with a double layer of well-washed gauze. In accordance with the weather (heat or storm) the water must be changed more or less often, but never by first removing the gauze covering—fresh water being allowed to flow through the gauze after removing the original water by tilting the vessel. Under this treatment certain algae are formed upon the peat-mold, which do not interfere with the health of the animals and may possibly be beneficial to them. At all events, under the treatment described the author has had no reason to complain of loss or inability to supply healthy leeches.—Pharm. Ztg. LV I (1912), No. 59, 596.

Albumins: Determination of the Different Kinds in Urine.—After illuminating the various errors that arise during systematic urine examinations, Grimbert gives accurate descriptions of the methods for the determination of the different kinds of albumen that may be present in urine. The importance of the subject makes a detailed description of these methods very desirable, but it must suffice here to briefly describe the preliminary experiments leading to the identification of the different albumins that may be present, leaving the details of carrying out the individual experiments for consultation in the original: To 10 cc. of the filtered urine 10 cc. of a saturated solution of sodium chloride and 2 drops of nitric acid are added. A turbidity of precipitation results, and the mixture is heated to boiling. If the turbidity disappears *primary albumen* alone is present; but if it remains, then *serin*, *globulin*, or *acetic acid-soluble-albumen* are present. The mixture is now filter-

ed. If the filtrate remains clear after cooling, but gives the biuret reaction, the presence of *secondary albumoses* and *peptones* is indicated, while failure to give the biuret reaction demonstrates their absence. If, however, the filtrate becomes turbid on cooling and gives the biuret reaction, only *primary albumoses* are present.—Pharm. Ztg. LVII (1912), No. 64, 644-645; from Journ. de Pharm d'Anvers, 1912, No. 13.

Yellow Coloring Matter of Ergot: Character, Composition and Chemical Relations.—Albert Freedom briefly reviews the characters of three yellow coloring matters from ergot heretofore described by different experiments, namely:

Sclerocrystallin, $C_7H_7O_8$, obtained by Dragendorff and Podwyssotzki (1877) in form of pale yellow needles;

Ergochrysin, $C_{21}H_{22}O_6$, obtained by Jacoby (1897) both in yellow crystals and amorphous; and

Secalonic Acid, $C_{14}H_{11}O_6$, obtained by Kraft (1906) in form of citron-yellow needles.

On comparing the descriptions of these three substances, the author says, we are forced to the conclusion that they are identical, and assuming Jacoby's molecular weight to be correct, his formula $C_{21}H_{22}O_6$ is the right one for the anhydride, while Kraft's formula, $C_{14}H_{11}O_6$, for secalonic acid is based upon analytical data that agree almost as well with the formula $C_{21}H_{22}O_6$, as with the one chosen by him—this applying also to the less accurate analyses of Dragendorff and Podwyssotzki.

By a method described, Mr. Freedom has now obtained a crystalline yellow coloring matter from ergot, which in several respects resembles that described, but which has the formula $C_{14}H_{11}O_7$ when dried *in vacuo* over sulphuric acid. It is further distinguished by the very high melting point, 338° C, whereas Kraft's secalonic acid melts at 224° . The substance in question was obtained pure in the form of pale yellow needles scarcely soluble in water, and sparingly soluble in alcohol or ether, but more readily soluble in chloroform, and quickly soluble in solutions of sodium hydroxide or carbonate with a golden yellow color. The author has obtained the acetyl derivative, which is shown to be derived from the anhydride, $C_{16}H_{12}O_6$, of the coloring matter, the latter probably belonging to the "flavone group"

of coloring matters.—Pharm. Journ. and Pharmacist, May 4, 1912, 562-569.

Fagaramide: A Constituent of the Root Bark of Fagara Xanthoxyloides, Lam.—In conjunction with F. Thümen, Professor H. Thoms has isolated from the root-bark of *Fagara Xanthoxyloides*, Lam. an interesting amidé, to which they have given the name fagaramide. It was obtained by extracting the root-bark with benzene, concentrating and adding petroleum spirit, when the fagaramide crystallized out. It crystallizes well from alcohol, has the empirical formula $C_{14}H_{17}NO_3$, and melts at 119° to 120° C. It yields a bromine compound of the formula $C_{14}H_{17}NO_3Br_2$ which crystallizes without decomposition from benzene and other hydrocarbons only, crystallization from alcohol resulting in the separation of bromine. By oxidation with potassium permanganate, fagaramide yields piperonal and piperonylic acid and on prolonged boiling with 50 per cent. alcoholic potash decomposes into an unsaturated acid, which proved to be piperonylic acid and a base, volatile in a current of steam, which was identified as isobutylamine. From these products the conclusion was drawn that fagaramide was the isobutylamide of piperonylacrylic acid.

The isobutylamide of piperonylacrylic acid belongs to the group of substituted acids, very few members of which have been found in nature. The one best known is piperine, the alkaloid of *Piper nigrum*.—Pharm. Jr. and Pharmacist, May 25, 1912, 686.

Methyl Alcohol: Toxicity.—In addition to the Berlin catastrophe other cases of poisoning by methyl alcohol, either by internal or external use, or by inhalation, etc., are quoted from Germany, Hungary, Russia and the United States. Statistics by Buller, Casey and Wood in the latter country show 200 cases of poisoning, resulting in blindness or death. Dr. Rudolf Foerster writes on the action of methyl alcohol, generally producing atrophy or paralysis of the optic nerve. Strange to state, however, that large quantities of methyl alcohol have but very little effect on some persons, while small amounts will prove fatal to others.—Ph. Zhalle, 1912 No. 2, 46.

Nicotine: Estimation in Tobacco.—In an article on "The Toxic Factor in Tobacco" in the "Lancet" (April 6, 1912), the author,

questioning the reliability of the methods hitherto used for estimating the amount of nicotine in tobacco, proceeds to describe a method which he evidently regards as being satisfactory and better than other published methods. The opinion is expressed that the chief obstacle against arriving at the true amount of nicotine in tobacco has been due to the difficulty of separating ammoniacal compounds from alkaloidal base;" and the method recommended is the precipitation of the nicotine from solution by adding excess of iodine, dissolving the periodide (after washing) in acetone, and titrating with thio-sulphate. The calculation is based on one molecule of nicotine combining with four of iodine.

E. F. Harrison and P. A. W. Self, commenting on the above, observe that while not dissenting in any way from the view that most or all of the published methods are by no means trustworthy or satisfactory, they are compelled to regard the method given by the *Lancet* chemist as being quite as unsatisfactory as most of the others. They give their reasons for this view, supported by experimental data, and describe a simple method to which they have been led in the course of some years experience in the determination of nicotine in tobacco, which they have found to give reliable results. This method consists in the addition of alkali to the tobacco or preparation of nicotine (slacked lime being used in the case of tobacco), and then to distill in a current of steam until all the nicotine has passed over, as shown by a few drops giving no cloudiness when treated with acid and excess of iodine. The distillate is received in a measured excess of standard acid, the delivery-tube of the condenser dipping below the surface so that no loss can occur; when all the nicotine is over, the distillate is titrated with standard alkali, using litmus solution or tincture of cochineal as indicator, and from the amount of acid neutralized by the distillate the total volatile alkali, consisting of nicotine and ammonia, is found. A further 10 cc. of normal acid is then added, and the liquid evaporated to about 50 cc. It is possible to lose traces of nicotine during the evaporation, but when once the total volatile alkali has been determined, loss of nicotine is of no consequence, and loss of ammonia cannot occur. The nicotine is then completely precipitated

by iodine, and the ammonia determined in the liquid by adding thiosulphate and distilling with alkali. The working details are given, but must be consulted in the original, in *Pharm. Journ. and Pharmacist*, June 1, 1912, 1912, 718-719.

Extractum Belladonnae Alcoholicum, B. P.: Modification of Formula.—Arthur W. Nunn observes that Alcohol Extract of Belladonna, B. P. is not altogether satisfactory; it is always a sticky mass, and becomes softer with age. A more constant and far handier preparation is obtained by operating on the fluidextract, preliminary as directed in the B. P. as far as obtaining the weight of the "moderately firm extract," and finding the amount of milk sugar required. Then treat the residue with sufficient of a mixture of 7 parts 90% alcohol and 1 part of water, to make a syrupy liquid. Now add the requisite quantity (previously ascertained) of milk sugar, and evaporate to the required weight (about three-fourth that of the fluidextract used). The next step is to "granulate" the residue of evaporation by passing it through a No. 20 sieve; again check the weight of the mixture, and then dry by very gentle heat, making up the loss in weight at the end of the process with dried potato starch, and mixing lightly.—*Pharm. Journ. and Pharmacist*, March 9, 1912, 318.

Zittman's Decoction: Rehabilitation into Medical Practice.—In the course of his interesting address on the biological valuation of drugs containing saponins, by the haemolytic effect of the latter when brought in contact with blood corpuscles, Prof. Kobert, discussing the possible value of the method in clearing up some of the contradictory statements regarding the medicinal properties of sarsaparilla, directs attention to the rehabilitation of the well-known but obsolete "Zittman's Decoction" by its readmission into the G. P. V. During the discussion following it was mentioned by Dr. Fröhlig, a member of the revision commission, that this rehabilitation of the ancient medicament was solely in consequence of the earnest recommendation and request of the medical members of the commission, who gave a decided preference to this preparation over that of "salvarsan" which had also been proposed for admission.—*Pharm. Ztg.* LVII (1912) No. 21, 214.

Liquor Opii Sedativus, B. P. C.: Cause of Precipitation and Remedy.—J. Manson has investigated the cause of the persistent precipitation in *Liquor Opii Sedativus* B. P. C. and finds this to be due to the decomposition of the calcium morphinate produced under the conditions of the method of preparation. This compound is decomposed by the carbonic acid of the air, calcium carbonate is formed and is precipitated, carrying with it the liberated morphine alkaloid, together with some extractive matter. If *Liquor Opii Sedativus* is a "desideratum," its stability might be maintained by the addition of dilute sulphuric acid, whereby an impure solution of morphine sulphate would be obtained—the lime being precipitated as sulphate. The ordinary sherry wine prescribed should also be replaced by detannated sherry. This, of course, alters the nature of the preparation, but its stability would be insured.—*Pharm. Jour. and Pharmacist*, March 9, 1912, 330.

Ointments: Their Bactericidal Effect.—As early as 1895 did Dr. E. Breslauer report on this subject. Dr. Robert Koch in 1881 proved that phenol dissolved in alcohol or oil does *not* possess any disinfectant properties. The author, Dr. Hugo Kuchl, states that the same is true of carbolated petrolatum. He refers to the toxicity of mercury, silver, and lead salts as based upon the dissociation theory of Arrhenius. Breslauer found that hydrous wool fat (lanolin) and cold cream (*Ung. Leniens*) are superior to petrolatum and anhydrous wool-fat as ointment bases, as carriers of disinfectants. The explanation is that ointment bases containing water are better carriers for antiseptics, because they are more readily absorbed.—*Ph. Zhalle*, 1912, No. 11, 273-276. O. R.

Cacao Suppositories: Addition of Wax to Promote the Incorporation of Aqueous Solutions.—P. van der Wielen and J. van Riel find that, by the addition of 2.5% of wax to cacao butter a base is obtained for suppositories which will permit the incorporation of aqueous solutions, glycerin or ichthyol up to the amount of 1 gm. to a 3 gm. suppository. They find that by the addition of wax the melting point of the cacao is reduced from the normal (32.5°) until the addition amounts to 3.4%, at

which it has the melting point of 31.0°; by the further addition it then rises, reaching the body temperature (37.0°) when 6.05% of wax has been added. The authors furthermore find that the addition of 2.5% of wax serves well also for the incorporation of iodoform when the suppositories are made by the melting-method. If, for example, 300 mgm. of iodoform is melted with 3 gm. of cacao butter, the iodoform is completely dissolved at the melting temperature, but on cooling is again separated forming *large* crystals before the fat completely solidifies. By adding 2.5% wax, however, the crystals formed are very much smaller. The addition of wax presents the further advantage of obviating the use of hollow suppositories for the reception of solutions of potent medicaments.—*Pharm. Ztg.* LVII (1912), No. 55, 534; from *Pharm. Weekbl.* 1912, No. 25.

Selenium: Technical Objection to its Presence in Sulphur and Pyrites.—The "Zeitschr. f. Agnew. Chemie" calls attention to the importance which attaches to the presence of selenium in sulphuric acid, since mineral oils and wax refined by the acid containing the impurity assume an incurable yellow color, and even minute traces of the element in the liquor of a sulphite cellulose factory may give rise to serious difficulties. A circumstantial process for the estimation of small quantities of selenium in sulphur and pyrites is therefore given, the details of which may be consulted in the abstract from *Chem. Trade Journ.*, June 1, 1912, 598, printed in *Pharm. Journ. and Pharmacist*, July 13, 1912, 47.

Carbonated Waters: Estimation of Ammonia.—G. D. Elsdon and Norman Evers, having noticed that the amount of free ammonia found in carbonated waters was often small, even in the case of obviously bad waters, have found that the presence of carbon dioxide in the distillate in quantities greater than 5 parts per 100,000 seriously interferes with the color produced by Nessler's solution. From an examination of waters aerated in the laboratory it was found that an aerated water containing as much as 0.020 parts of free ammonia per 100,000, might, if treated by the ordinary method, be returned as practically ammonia

free. The following process is proposed as the most satisfactory method of overcoming this difficulty: After removal of as much carbon dioxide as possible by shaking in a "Winchester," 500 cc. of the water are transferred to the distillation flask, and 5 cc. of N/H_2SO_4 (or more if the alkalinity of the water requires it) are added. Fifty cc. are then distilled off and rejected, thus removing the carbon dioxide. An equivalent quantity of $N/NaOH$ and the usual amount of sodium carbonate are then added, and

the estimation of free and albuminoid ammonia proceeded with in the usual manner. Many waters were aerated in the laboratory, and examined by this process. The results on the aerated waters were practically identical with those on the original waters as regards free ammonia. The albuminoid ammonia is slightly increased by aeration, whether it is estimated by the above process or by the ordinary method.—Pharm. Journ. and Pharmacist, March 23, 1912, 394.

RECOGNITION OF SYNTHETIC DRUGS BY NATIONAL PHARMACOPOEIAS.

The Editor of the Chemist and Druggist, (London) recently examined 15 national pharmacopoeias in order to determine the extent to which the modern synthetics are recognized officially, and sums up as follows:

"In all of the fifteen Pharmacopoeias considered in the foregoing *resume*, antipyrin, phenacetin, saccharin, and sulphonal are official. Leaving out of consideration the British Pharmacopoeia, 1898, the remaining fourteen Pharmacopoeias, which have all appeared during the present century, in addition to the above mentioned four synthetics, recognize forty-nine different new synthetic remedies. In the following tabulation the popular trade names are used, the figures indicating to what extent they are official:

Dermatol, 13 times.
Duotal, 13 times.
Trional, 12 times.
Diuretin, 11 times.
Salipyrin, 11 times.
Aspirin, 8 times.
Urotropine, 7 times.
Heroin, 6 times.
Protargol, 6 times.
Tannalbin, 6 times.
Aristol, 5 times.
Dionin, 4 times.
B-Eucaine, 4 times.
Creosotal, 4 times.
Iodol, 4 times.
Salophen, 4 times.

Veronal, 4 times.
Benzonaphthol, 3 times.
Euquinine, 3 times.
Lactophenin, 3 times.
Pyramidon, 3 times.
Tannigen, 3 times.
Tannoform, 3 times.
Xeroform, 3 times.
Airol, twice.
Betol, twice.
Exalgin, twice.
Migrainin, twice.
Novocaine, twice.
Stovaine, twice.
Suprarenin, twice.

Anesthesine, atoxyl, arsacetin, arrhenal, collargol, chinosol, diiodoform, reffatin, itrol, orexine tannate, orthoform, phenolphthalein, sozoiodol acid, sozoiodol ammonium, sozoiodol zinc, thiocol, urethane, and vioform, 1 each."

Of General Interest

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

Thirty-eighth Annual Convention.

The thirty-eighth annual convention of the National Wholesale Druggists' Association was held at Milwaukee, Wis., during the week of October 14, with a good attendance.

The first session was formally opened at Hotel Pfister at 10 o'clock on Tuesday morning. The customary greetings were extended by the mayor and commercial bodies of the city, which were replied to on behalf of the Association by Dr. William Jay Schieffelin, of New York. The greetings of the American Pharmaceutical Association were presented by General Secretary James H. Beal, of that society. Professor Beal's greetings were responded to by Mr. Albert Plaut, of New York City, who paid an eloquent tribute to the past work of the A. P. A. in its relation to pharmacy as a whole and to the National Wholesale Druggists' Association.

Greetings on behalf of the newly created National Association of Manufacturers of Medicinal Products were presented by Mr. Charles J. Lynn, of Indianapolis, to which response was made by Thomas F. Main, of New York. The Proprietary Association of America spoke through George L. Douglass, Esq., to which Mr. Charles A. West, of Boston, responded. The New York Association sent greetings through Mr. M. R. Snow, the New Jersey and Pennsylvania Associations through Mr. C. Mahlon Kline, and the Virginia Association through Mr. Edgar M. Taylor, to which suitable responses were made respectively by Messrs. C. F. Weller, of Nebraska, William Scott, of Indianapolis, and C. P. Walbridge, of Missouri.

President Theodore F. Meyer's address dealt with the history and past work of the N. W. D. A., with the Eighth International Congress of Applied Chemistry, the Fifteenth International Congress of Hygiene and Demography, the Fifth International Congress of Chambers of Commerce; na-

tional legislation proposed and enacted; the general condition of the wholesale drug trade, and paid a fitting tribute to the memory of the late Frank A. Faxon, ex-President of the Association.

Subsequent sessions of the convention were devoted mainly to the consideration of reports of the officers and committees, and included also the hearing of addresses from distinguished visitors.

Among the reports to which the Secretary of the A. Ph. A. had the pleasure of listening and from which extracts will be printed in future issues of the Journal were the following:

Committee on Commercial Travelers and Selling Methods, by F. M. Berks, Peoria, Ill.; Committee on Credits and Collections, by Mr. Lee M. Hutchins, Grand Rapids, Mich.; Committee on Memorials of Deceased Members, by H. J. Schnell, New York; Committee on Fire Insurance, by George W. Lattmer, Columbus, Ohio; Employer's Liability and Workmen's Compensation, by James W. Morrison, of Chicago; Committee on Drug Market, by Irving McKesson, New York; Committee on Paints, Oils and Glass, by W. T. Harper, Ottumwa, Iowa; Committee on Proprietary Goods, by William P. Ritchey, of New York; Committee on Legislation, by Charles A. West, Boston; Committee on Prevention of Adulteration, by O. L. Biebinger, St. Louis; Committee on Trade Marks, George M. Beset, Burlington, Vt.; Special committee on Anti-Narcotic Legislation, by Charles A. West, Boston.

All the reports were characterized by the evident thoroughness and painstaking care with which the committees had studied their respective subjects and by the breadth of view expressed, the several questions being considered in a large and liberal way rather than from the narrow standpoint of trade interests.

At the Wednesday morning session Mr. Thomas H. Potts, Secretary of the N. A. R.

D., presented the greetings of that association in an admirable and eloquent address dealing with the relation of his own society to the allied organizations in pharmacy, and with the N. A. R. D. activity in legislative matters.

Professor Edward Kremers, of the School of Pharmacy of the University of Wisconsin, delivered an interesting address upon "The Cultivation of Medicinal Plants," in which he reviewed the history of drug collection and cultivation, and gave an outline of the efforts at the State University to place drug plant cultivation upon a scientific basis.

Mr. Albert Plaut gave an outline of the work of the Committee of Revision of the United States Pharmacopœia, showing the progress of the work to date and predicting that the report of the Committee of Revision would be ready for final consideration within another year.

The report of the Special Committee on Anti-Narcotic Legislation was presented by Chairman Charles A. West, of Boston, in connection with which there was read a telegram from President William H. Taft, which endorsed proposed legislation regulating the sale of narcotics, and requested the support of the Association for its enactment.

Dr. Hamilton Wright, of Washington, D. C., U. S. Opium Commissioner, was present at the Thursday morning session by special invitation. Dr. Wright delivered a very interesting address, reviewing the history of the growth of the opium habit, and the international conventions at the Hague and at Shanghai, and the efforts being made by the principal powers of the world to regulate the international traffic in narcotic drugs, and explained the provisions of the present Harrison Bill now pending before the United States Congress.

At the conclusion of Doctor Wright's address there was a general discussion of the Harrison Bill, to which several minor amendments were suggested. The consensus of opinion was in favor of the bill as a whole, but suggesting greater certainty of definition, so as to express more specifically the character of acts it is designed to cover, and so that the bill should control the illegitimate traffic in such drugs when carried on outside of the regular drug trade, whether wholesale or retail.

At the fifth session the Board of Control

made a lengthy and comprehensive report. In its character the Board of Control seems to combine the functions of the A. Ph. A. Council and the N. A. R. D. Committee on Resolutions. The report of the Board of Control dealt with the reports of the various officers and committees, and presented resolutions expressing the attitude of the N. W. D. A. upon the various questions considered.

The number of new members elected was larger than at any previous convention, consisting of eight active, and fifty-four associate members. Mr. John N. Cary, of Indianapolis, Ind., and Col. John B. Purcell, of Richmond, Va., were elected to honorary membership.

Officers elected for the ensuing year are as follows:

President—Albert Plaut, New York.

First Vice-President—William B. Strong, of Milwaukee, Wis.

Second Vice-President—John A. Gallagher, Kansas City.

Third Vice-President—Benjamin A. Jackson, Providence, R. I.

Fourth Vice-President—Marion Ward, Indianapolis, Ind.

Fifth Vice-President—Lynn Fort, Atlanta, Ga.

Secretary—Joseph E. Toms, New York.

Treasurer—Samuel E. Strong, Cleveland, Ohio.

Board of Control—Charles Gibson, Albany; Charles E. Bedwell, Omaha, Neb.; Andrew J. Geer, Charleston, S. C.; George R. Merrell, St. Louis; James W. Morrisson, Chicago.

General Representative—F. E. Holliday, New York, N. Y.

The official headquarters of the Convention were at the Hotel Pfister, which, however, was unable to accommodate all of the members present and who were accommodated at other nearby hotels. Abundant entertainment in the way of auto rides, luncheons and theater parties were given to the visiting ladies. On Thursday afternoon an excursion was made to the Horlick's Malted Milk laboratories, at Racine, Wis., and in the evening an elaborate banquet was held at the Hotel Pfister, Mr. James W. Morrison, of Chicago, being toastmaster, an office which he discharged with great ability. Speeches were made by the retiring president,

Mr. Theodore F. Meyer; Hon. Levi H. Bancroft, Attorney-General of Wisconsin; Rev. M. Dorward; Hon. Joseph C. Donnelly, Chief Judge of the Civil Court of Milwaukee, and by President-elect Mr. Albert Plaut.

Jacksonville, Fla., was selected as the next meeting place, some time in November, not earlier than the 17th.



THE DENVER MEETING OF THE NATIONAL ASSOCIATION OF BOARDS OF PHARMACY.

A. F. SALA.

The National Association of Boards of Pharmacy was called to order Tuesday morning, August 20, at Denver, Col., by the President, R. H. Walker of Gonzales, Texas. After the usual speeches of welcome and responses thereto, the committee on credentials ascertained who was entitled to a voice in the meeting. This done, the members proceeded to dispose of the business on hand. President Walker in his usual and happy style then presented his address, making several recommendations that were later on approved by the association.

The committee on questions and methods made a very voluminous and entertaining report containing much information as to the work being done by this association.

F. C. Dodds, Secretary of the Illinois Board of Pharmacy, introduced a set of resolutions fixing the minimum and average grades for successful examination as a basis for reciprocal registration. These grades were, after due and thorough discussion, fixed at not less than 60 per cent in any subject and an average of not less than 75 per cent upon the whole. The resolutions also provided for a fee of \$5.00 to be paid by the candidates to the National Association Boards of Pharmacy. They further provide for an advisory committee to be appointed by the President, whose duty it shall be to visit the several boards at their examinations with

a view of bringing about greater uniformity in methods.

The expenses of this committee are to be paid out of the \$5.00 fee, it being shown by the treasurer's report that sufficient funds can be collected, 300 reciprocal registrations being recorded in the year just closed.

The committee on reciprocity with Cuba reports progress and feels that same can be brought about in a short time.

The Committee on Legislation reported a scheme to establish a National Board of Examiners through which a national certificate is to be issued, good in all states. This means of course that the candidates must be graduates in pharmacy and comply in all respects with the most advanced ideas of registration. The general drift and inclination as exhibited during the discussion of this scheme is toward the college prerequisite and thus bring about reciprocal relationship and registration in a more satisfactory way.

Both of these schemes—Mr. Dodds and that of the Committee on Legislation—were adopted by the Association.

Three whole days were spent at the Denver meeting in discussing the various matters pertaining to registration, and those present feel that steps in the right direction were taken towards clearing the pharmaceutical atmosphere relative to registration in its various forms.

A scheme for intelligent examinations of the beginner in pharmacy was also presented, which if followed generally, will simplify that part of our problems.

The election of officers for the ensuing year resulted as follows:

President—Wm. Mittlebach, Boonville, Mo.

First Vice-President—I. P. Gammon, Boston, Mass.

Second Vice-President—H. C. Shuptrine, Savannah, Ga.

Third Vice-President—Miss Kittie Harbord, Salem, Ore.

Secretary-Treasurer—A. F. Sala, Winchester, Ind.

Reports of A. Ph. A. Committees

REPORT OF COMMITTEE OF PHYSIOLOGICAL TESTING.

The committee that you have appointed to investigate the subject of physiological testing, desires to make at this time the following report:

During the year, since the last meeting of the Association in Boston, considerable work has been done in testing the following substances:

Preparations of Cannabis Sativa.

Preparations of Suprarenal Gland.

Preparations of Ergot.

Preparations of Heart Tonics of the Digitalis Series.

Our work has progressed to a point where we feel it wise to submit specific reports on preparations of Cannabis Sativa and the Suprarenal Glands. Please note the detailed reports that follow.

Our work on Ergot has not progressed to a point where we believe it wise or desirable to report definite results. The same applies also to the heart tonics of the digitalis series. We believe that during the next year we should continue our work on these two classes of products in the most careful possible way, should take into consideration all new reports as they arise, as to method or manner of testing pharmaceutical products of these drugs and submit in due time definite reports in much the same manner as we have upon products of Cannabis Sativa and of the Suprarenal Gland.

During the course of our work the committee on physiological testing of the United States Pharmacopoeial Revision Committee have suggested to us that this committee should cooperate with them. We shall attempt to do so as far as possible, in order that the combined efforts of the workers in this particular field may result in a unanimity of opinion as to the wisest course to pursue in the adoption of methods of physiological assay, standards and such, which may apply to that class of pharmaceutical and chemical products, which cannot be assayed by chemical means.

We believe it highly necessary that the association should endeavor to make arrange-

ments with some central authority as the Bureau of Public Health and Marine Hospital Service, to keep and issue to those desiring them definite and positive standards of the preparations of these drugs, by which they can measure and standardize products as they are manufactured. We do not wish it understood that we should leave the matter to the American Public Health and Marine Hospital Service Laboratory to devise standards and such, but that we should cooperate with them. If it meets with the approval of the Association we believe it would be wise for the committee to be authorized to take this matter up in detail with the director of the American Public Health and Marine Hospital Service Laboratory, in order that it may be determined exactly what may be accomplished. Very sincerely yours,

(Signed) WORTH HALE.

CHARLES R. ECKLER.

W. A. PEARSON.

E. M. HOUGHTON,

Chairman.

<>

PHYSIOLOGICAL ASSAY OF PHARMACEUTICAL PREP- ARATIONS OF CANN- BIS SATIVA.

1. The activity of pharmaceutical preparations of Cannabis Sativa depends upon one or more active substances, which produce a characteristic intoxication in animals when given internally.

Preparations of Cannabis Sativa may be tested physiologically by observing the typical intoxicating effects produced by the active substances contained in the drug when the preparations are administered to selected test animals in suitably sized doses, under proper test conditions.

2. The animal best adapted for determining the value of preparations of Cannabis Sativa is a carefully selected dog, which shows a characteristic reaction to small doses of the drug.

3. The test animals should be given a purgative twenty-four hours before the test is to be made, and allowed to fast until ready for use, plenty of water being supplied. Two

dogs, preferably four, are taken for a test. On the first day of the test two of the animals receive .005 gms. to .01 gms. per kilo body weight of the standard extract Cannabis Sativa contained in a gelatine capsule administered per os. The other two animals are each given the same quantity of the unknown preparation of Cannabis Sativa administered under the same conditions. The quality and degree of the intoxication are carefully observed in the four animals. On the second, preferably the third day, when the animals have completely recovered, the dogs are again employed for testing the activity of the drug in the same manner as before, except that the two animals that received the unknown extract of Cannabis Sativa on the first day are given the known or standard on the second administration. The tests are repeated until the amount of the unknown can be determined as accurately as possible, that will produce the same quality and degree of intoxication as the definite quantity of the known extract of Cannabis Sativa. From this data can be determined the relative activity of the two samples of the preparation of Cannabis Sativa.

4. We believe, before this method of assay is adopted in the United States Pharmacopœia, arrangements should be perfected, so that some central authority, like the Bureau of Public Health and Marine Service Laboratory at Washington, would supply a standard extract of Cannabis Sativa to be employed by various manufacturers for standardizing their pharmaceutical preparations.

<>

THE PHYSIOLOGICAL ASSAY OF THE BLOOD PRESSURE RAISING PRINCIPLE FOUND IN PREPARATIONS OF SUPRARENAL GLANDS.

1. The active principle of the suprarenal glands produces a characteristic quantitative rise in the blood pressure of anesthetized animals injected intravenously.

Preparations of suprarenal glands containing such active principle may be assayed quantitatively by comparing the MAXIMUM blood pressures produced by the injection of definite quantities of the preparation properly diluted into the circulatory system, with the MAXIMUM rise in blood pressure produced by the injection of definite quantities of similarly diluted active principle of the suprarenal glands UNDER THE SAME CONDITIONS.

2. The animal best adapted for the making of the blood pressure experiments for the determination of quantitative amounts of the active principle of the suprarenal glands, is the dog.

3. The test animal, the dog, should be anesthetized by some member of the fatty acid series, tri-chlor-tertiary-butyl-alcohol being especially recommended for this purpose.

4. The apparatus required is a mercury manometer with suitable connections properly arranged for making blood pressure tracings.

5. Method. The test animal is anesthetized about one-half hour before the test is to be made. When anesthesia is complete, the dog is fastened to a suitable board or warming-pan and the artery and vein chosen, a carotid artery and each femoral vein, are opened and glass cannulae inserted, or the injections may be made into the vein through a small hypodermic needle.

6. The active principle, the standard, by which the value of the known shall be determined, should be chemically pure. This substance should be dissolved in freshly prepared physiologic salt solution, in the proportion of 0.000,01 gm. to 1 cc., or 1:100,000.

7. The unknown should be freshly prepared in physiologic SALT solution so that it will have approximately the same activity as the known. Two or more injections of the standard solution of the active principle of the suprarenal glands prepared as directed under 6 should be made into the vein chosen, and the rise in blood pressure observed in order to determine whether the animal is in a suitable condition for making a quantitative blood pressure measurement. If the animal has been found to react quantitatively to the known, then alternate injections of the solutions of the known, 6, and the unknown, 7, should be administered into the vein chosen, until the quantity of the solution of the unknown has been found, that will show the same rise in blood pressure under the same conditions as a given quantity of the standard. From this data can be figured the percentage strength of the unknown as compared with the known.

8. We believe that some central authority, like the Laboratory of the American Public Health and Marine Hospital Service should be requested to supply to such parties as wish to assay the active principles of the Suprarenal Glands, chemically pure Adrenalin or its equivalent Epinephrin as a standard.

Practical Formulas

Committee:

OTTO RAUBENHEIMER, *Chairman*,
1341 Fulton St., Brooklyn, N. Y.
FRANKLIN M. APPLE,
31st and Berk Sts., Philadelphia.
JAMES M. GOOD,
2601 Olive St., St. Louis.
THEO. D. WETTERSTROEM,
3935 Spring Grove Ave., Cincinnati.
MARTIN I. WILBERT,
25th and E. Sts., N. W., Washington,
D. C.

Contributions to this department, or criticisms of formulas, may be sent to any member of the Committee.

<>

PROPOSED FOR A. PH. RECIPE BOOK.

(Continued from page 765.)

The numerous letters received give evidence that the pharmacists and A. Ph. A. members have appreciated my attempt of collecting formulas for different lotions, and I have therefore concluded to continue same and trust that the many formulas will prove of some value.

Your Chairman has also included a number of tried formulas for "*Summer Specialties*," which can be pushed to advantage, commercially and professionally, by the pharmacist in the summer resorts, at the seashore and in the city.

Quite especially can the manufacture and sale of "lotions for the complexion" be made a source of revenue during the summer season, and consequently a number of formulas for such lotions are given.

Special attention has been paid to "Sunburn Lotions," that is for the prevention and also for the relief of sunburn, and directions for use are also given.

Lotions for the prevention of "Insect Bites" and also for the relief of mosquito or bee stings, are always in great demand during the summer, and consequently a number of formulas are given, some of which the writer has successfully used for years.

Suggestions are solicited.

Respectfully submitted,

OTTO RAUBENHEIMER, *Chairman*.

Abbreviations can be found in May JOURNAL, p. 504.

Formulas No. 1 to 22, see February JOURNAL, p. 169 to 173.

Formulas No. 23 to 30, see April JOURNAL, p. 366 to 368.

Formulas No. 31 to 41, see May JOURNAL, p. 505 to 506.

Formulas No. 42 to 50, see June JOURNAL, p. 637 to 638.

Formulas No. 51 to 77, see July JOURNAL, p. 761 to 765.

<>

No. 78.

LOTIO AMYGDALÆ COMPOSITA.

Compound Almond Lotion.

Mercuric Bichloride.....	0.06 gm.
Ammonium Chloride.....	0.5 gm.
Bitter Almond Mixture (No. 79)	
a sufficient quantity	
To make.....	30 cc.

Dissolve the Salts in the Bitter Almond Mixture. Used as a peeling lotion for freckles. Some dermatologists gradually increase the quantity of Mercuric Bichloride to 0.25 gm., which, however, must be done carefully.

<>

No. 79.

MISTURA AMYGDALÆ AMARÆ.

Bitter Almond Mixture.

B. P. Cx.

Bitter Almonds	7.5 gm.
Distilled Water, a sufficient quantity	
To make.....	100 cc.

Blanch the Bitter Almonds in Cold Water and triturate with a little of the Distilled Water to form a thin paste. Then gradually add sufficient Distilled Water to make up the required volume, and strain.

This preparation is used as a basis for skin lotions. It must not be confused with the Emulsion of Almond, which is intended for internal administration and does not contain hydrocyanic acid, and which on account of its acacia and quite especially its sugar content, is not suitable as a lotion.

No. 80.

LOTIO AMYGDALÆ ET BIS- MUTHI.

Almond and Bismuth Lotion.

Bismuth Subnitrate.....	6 gm.
Diluted Hydrocyanic Acid.....	2 cc.
Bitter Almond Mixture (No. 79)	
a sufficient quantity	_____

To make..... 125 cc.

Mix well. Agitate before using.

The quantity of Diluted Hydrocyanic Acid is sometimes increased to 4 cc.

Used as an antipruritic in eczema, when skin is *not* broken.

<>

No. 81.

LOTIO CALAMINÆ ET CRETÆ.

Calamine and Chalk Lotion.

Calamine	5 gm.
Prepared Chalk.....	5 gm.
Diluted Hydrocyanic Acid.....	2 cc.
Glycerin	15 cc.
Lime Water	100 cc.
Elder Flower Water, a	
sufficient quantity	_____

To make..... 250 cc.

Triturate the Prepared Chalk and the Calamine to a very fine powder, triturate with the Elder Flower Water and add the other ingredients.

Elder Flower Water or Aqua Sambuci is a distilled water, similar to rose water or orange flower water.

This is a cooling lotion used as an antipruritic in acute and subacute inflammation.

Dr. L. Duncan Bulkley.

<>

No. 82.

LOTIO SULPHURIS COMPO- SITA.

Compound Sulphur Lotion.

Precipitated Sulphur.....	5 gm.
Ether	15 cc.
Alcohol, a sufficient quantity	_____

To make..... 125 cc.

Mix well. Keep in well stoppered bottles and agitate before using.

Compound Sulphur Lotion is employed against acne (pimples), comedones (black-heads), and seborrhœa (excessive fatty secretion).

No. 83.

LOTIO PHILLIPSONI.

Phillipson's Lotion.

Phillipson's Mixture.

Glacial Acetic Acid	
Tincture of Benzoin	
Spirit of Camphor.....of each	6 cc.
Alcohol, a sufficient quantity	_____

To make..... 100 cc.

Mix.

Used in slight cases of excessive fat-secretion and its sequelæ, by rubbing on face three times a day.

Saalfeld Kosmetik.

<>

No. 84.

AQUA COSMETICA ORIEN- TALIS HEBRA.

Hebra's Oriental Lotion.

Mercuric Bichloride.....	0.5 gm.
Tincture of Benzoin.....	1 cc.
Bitter Almond Mixture (No. 79)	
a sufficient quantity	_____

To make 100 cc.

Dissolve the Mercuric Bichloride in the Bitter Almond Mixture and add the Tincture of Benzoin.

As this preparation deteriorates upon keeping, it should be freshly prepared.

Agitate well before using.

D. M.

<>

No. 85.

AQUA COSMETICA LILIONESE.

Lilionesse Lotion.

Purified Talc.....	100 gm.
Borax	15 gm.
Potassium Carbonate.....	5 gm.
Glycerin	50 cc.
Tincture of Benzoin	
Cologne Water.....of each	25 cc.
Rose Water.....	900 cc.

Dissolve the Salts in the Rose Water and add the Cologne Water. Triturate the Purified Talc, which should be in very fine powder, with the Glycerin; add the Tincture of Benzoin and then gradually add the solution of the Salts in the Rose Water.

D. M.

No. 86.

AQUA CHLORALO-TANNATA.

Chloral and Tannin Lotion.
 "Captol" Substitute.

Hydrated Chloral.....	2 gm.
Tannic Acid.....	1 gm.
Tartaric Acid.....	1 gm.
Castor Oil	2 gm.
Alcohol, 90 per cent.....	89 gm.
Essence of Violet.....	5 gm.

To make..... 100 gm.

Dissolve the first four ingredients in the Alcohol and add the Perfume.

Said to produce a similar preparation to "Captol," a German specialty and dandruff remedy.

Münchener Vorschriften.

<>

No. 87.

AQUA CRINALIS CUM CHININO.

Eau de Quinine.

Quinine Sulphate.....	1 gm.
Cologne Water.....	10 gm.
Glycerin	50 gm.
Rum	100 gm.
Alcohol, 90 per cent.....	150 gm.
Rose Water.....	600 gm.

Dissolve the Quinine Sulphate in the Alcohol and add the other ingredients.

See also *Latio Quininae* No. 75.

Münchener Vorschriften.

<>

No. 88.

LOTIO CANTHARIDINI.

Cantharidin Lotion.
 Latio Crinalis Stimulans.
 Stimulating Hair Lotion.

Cantharidin	0.02 gm.
Acetone	5 cc.
Castor Oil.....	20 cc.
Alcohol, a sufficient quantity	_____
To make.....	100 cc.

Dissolve the Cantharidin in the Acetone, add the Castor Oil and the Alcohol.

B. P. Cx.

No. 89.

LOTIO CRINALIS.

Hair Lotion.

(Sir Erasmus Wilson.)

Almond Oil.....	12.5 cc.
Stronger Ammonia Water.....	12.5 cc.
Oil of Rosemary.....	0.5 cc.
Alcohol	50 cc.
Honey Water (No. 93), a sufficient quantity	_____

To make..... 100 cc.

Saponify the Almond Oil with the Ammonia Water and add the other ingredients, previously mixed together.

This is a stimulating hair lotion, resembling the one used by Sir Erasmus Wilson, and consequently commonly called by his name.

It is also prepared without oil and should in that case be specified "*sine oleo*."

B. P. Cx.

<>

No. 90.

LOTIO GLYCERINI.

Glycerin Lotion.

"Glycerin and Rose Water."

Stronger Rose Water

Glycerin.....equal volumes

According to the experience of the writer, the mixture of Glycerin and Rose Water always develops a fungus, which, however, does not form when the *Stronger* Rose Water is employed.—O. R.

<>

No. 91.

LOTIO GLYCERINI BORATA.

Borated Glycerin Lotion.

Boric Acid.....	2 gm.
Stronger Rose Water	
Glycerin.....of each	50 cc.
Dissolve.	

A superior, more antiseptic and healing lotion for chapped hands, etc.—O. R.

<>

No. 92.

LOTIO GLYCERINI BORACIS.

Lotion of Glycerin of Borax.

Glycerin of Borax (No. 59)....	30 cc.
Glycerin	60 cc.
Rose Water, a sufficient quantity	_____
To make.....	250 cc.

Mix.

Ph. F.

No. 93.

AQUA MELLIS.

Honey Water.

Oil of Bergamot.....	0.78 cc.
Oil of Lavender.....	0.26 cc.
Oil of Cloves.....	0.26 cc.
Oil of Sandal Wood.....	0.05 cc.
Tincture of Musk.....	1.56 cc.
Tincture of Saffron.....	0.78 cc.
Stronger Rose Water.....	15 cc.
Stronger Orange Flower Water	15 cc.
Honey	0.50 cc.
Alcohol, a sufficient quantity	—

To make..... 100 cc.

Dissolve the Oils and Tinctures in the Alcohol, add the solution of the Honey in the Waters and filter.

B. P. Cx.

<>

No. 94.

FRECKLE LOTION.

(Prof. Paschkis.)

Potassium Carbonate.....	60 gm.
Potassium Chlorate.....	20 gm.
Borax	15 gm.
Sugar	60 gm.
Glycerin	150 gm.
Rose Water.....	330 gm.
Orange Flower Water.....	355 gm.
Dissolve.	
D. M.	

<>

No. 95.

AQUA COSMETICA HUFELANDI.

Hufeland's Schönheitswasser.

Bitter Almond.....	5 gm.
Orange Flower Water	
Rose Water.....of each	70 gm.
Borax	6 gm.
Tincture of Benzoin.....	14 gm.

Prepare the emulsion according to the art, dissolve the Borax and add the Tincture, agitating well.

Hell.

<>

No. 96.

AQUA COSMETICA ALBA.

Flüssige Weisse Schminke.

Lead Carbonate.....	50 gm.
Starch	
Talc.....of each	25 gm.
Rose Water.....	100 gm.
Orange Flower Water.....	20 gm.

Triturate the solids to a very fine powder and mix well with the liquids.

Hell.

Inasmuch as basic Lead Carbonate, or "Cerussa," might produce more or less toxic effects, especially if used for some time and especially if there should be some abrasions of the skin, the writer has therefore successfully substituted the less poisonous Zinc Oxide or Zinc Carbonate.—O. R.

<>

No. 97.

AQUA COSMETICA RUBRA.

Rotes Schönheitswasser.

White Cosmetic Water

(No. 96).....	220 gm.
Carmine, in fine powder.....	0.3 gm.
Mix well.	

Hell.

<>

No. 98.

LOTIO CONTRA PITYRIASIS.

Lotio Cephalica.

Lotion against Scales.

Salicylic Acid.....	1 gm.
Glycerin	5 gm.
Alcohol	94 gm.
Dissolve.	
Pharm. Ned.	

<>

No. 99.

LOTIO CONTRA SCABIES.

Itch Lotion.

Lotion contre la gale.

Sulphurated Soda or	
Sulphurated Potassa.....	1 part
Water	4 parts
Dissolve.	
Codex.	

<>

No. 100.

LOTIO GLYCERINI BORATA.

Lac Glycerini—Glycerin Milch.

Mucilage of Quince Seed.....	70 gm.
(Prepared from 7 gm.)	

Soap, Medicinal.....	1 gm.
Alcohol, 68 per cent.....	1.5 gm.
Boric Acid.....	2.5 gm.
Glycerin	25 gm.
Oil of Lavender Flowers.....	2 drops

Dissolve the Soap in the Alcohol and mix with the Mucilage. Heat the Glycerin and Boric Acid until dissolved, mix with the mucilage and add the Oil.

Hess.

AMERICAN PHARMACEUTICAL ASSOCIATION

No. 101.

LOTIO CRINALIS DETERGENS.

Detergent Hair Lotion.

Haar—Waschwasser.

Borax	5 gm.
Tincture of Quillaja.....	15 gm.
Rum	30 gm.
Orange Flower Water.....	150 gm.
Mix.	
Hess.	

<>

No. 102.

LOTIO LANOLINI.

Lanolin Waschwasser.

Lac Lanolini.

Lanolin	15 gm.
Rose Water.....	150 gm.
Soap, in powder.....	1 gm.
Borax	1.5 gm.

Melt the Lanolin (*Hydrous Wool-Fat*) on a water bath, add the Soap and the Borax and incorporate the Rose Water, which is best done by agitation in a bottle.

It forms a homogeneous emulsion or milk. Hell.

<>

No. 103.

LOTIO MENTHOLIS.

Shaving Lotion.

Menthol	2.5 gm.
Tragacanth	4 gm.
Glycerin	12 gm.
Alcohol	15 gm.
Water	300 gm.

Allow the Tragacanth to swell in the Water so as to form a homogeneous mucilage. Add the Glycerin and then the Solution of the Menthol in the Alcohol.

This preparation may be colored pink.

It is an excellent cooling lotion, especially after shaving.

Hell.

<>

No. 104.

AQUA COSMETICA VIENNENSIS.

Eau Cosmetique de Vienne.

(Dr. Bernatzik.)

Almonds	15 gm.
Orange Flower Water	
Rose Water.....of each	60 cc.
Borax	1 gm.
Tincture of Benzoin.....	2 cc.

Blanch the Almonds and make an emulsion

with the Waters, according to the art. Then add the Borax and Tincture.

Eulenburg's Real-Enzyklopädie.

<>

No. 105.

LOTIO ROSÆ.

Rose Lotion.

Lac Rosæ—Milk of Roses.

Almonds, blanched.....	10 gm.
Curd Soap.....	0.69 gm.
White Wax.....	0.69 gm.
Almond Oil.....	0.62 cc.
Oil of Bergamot.....	0.62 cc.
Oil of Lavender Flowers.....	0.16 cc.
Oil of Rose.....	0.08 cc.
Alcohol	15 cc.

Rose Water, a sufficient

quantity

To make..... 100 cc.

Beat the blanched Almonds with seven times their weight of Rose Water, and add the resulting emulsion gradually to the Curd Soap, White Wax and Almond Oil, previously mixed by the aid of a gentle heat. Strain the emulsion, add the Oils dissolved in the Alcohol and sufficient Rose Water.

Curd Soap or Sapo Animalis B. P., is prepared by heating purified animal fat, consisting chiefly of stearin, with sodium hydroxide and water and separating the curd soap by the addition of sodium chloride.

B. P. Cx.

<>

No. 106.

LOTIO ROSÆ VIRGINIALIS.

Lait virginial à la rose.

(Hirzel.)

Tincture of Tolu.....	3 cc.
Rose Water.....	200 cc.

Misce secund. art.

Paschkis, Kosmetik.

<>

No. 107.

LOTIO GLYCERINI COMPOSITA.

Compound Glycerin Lotion.

White Wax.....	2.50 gm.
Lard	3.75 gm.
Soap, in powder.....	2.50 gm.
Salicylic Acid.....	0.02 gm.
Glycerin	2.50 cc.
Almond Oil.....	3.75 cc.
Oil of Rose.....	0.10 cc.
Chloroform	0.52 cc.

Distilled Water, a sufficient

quantity

To make..... 100 cc.

Heat the Wax and Lard with the Almond Oil, on a water-bath until melted, and pour the mixture into a warm mortar. Then add the other ingredients and gradually add sufficient Distilled Water, stirring briskly after each addition, to produce the required volume.

It is recommended by the writer that the Water should be previously warm, as thereby a better preparation will be obtained.—O. R.

If about one-tenth of the Distilled Water in the above formula be replaced by neutral Cucumber Juice, then the product will resemble preparations sold under the name "*Glycerin and Cucumber.*"

B. P. Cx.

<>

No. 108.

LOTIO BENZOINI COMPOSITA.

Compound Benzoin Lotion.

Tincture of Benzoin.....	6.25 cc.
Tincture of Quillaja.....	3.12 cc.
Cologne Water.....	6.25 cc.
Distilled Water, a sufficient quantity	_____
To make.....	100 cc.

Mix.

B. P. Cx.

<>

No. 109.

LOTIO STAPHISAGRIÆ.

Stavesacre Lotion.

Nursery Hair Lotion.

Stavesacre, in coarse powder..	10 gm.
Acetic Acid, 33 per cent. B. P..	5 cc.
Alcohol	10 cc.
Oil of Geranium.....	0.02 cc.
Oil of Lemon.....	0.04 cc.
Glycerin	5 cc.
Water, a sufficient quantity	_____
To make.....	100 cc.

Boil the powdered Stavesacre Seeds with the Acetic Acid and 80 cc. of Water for ten minutes in a covered vessel, set aside till cool, then add the oils, previously dissolved in the Alcohol; filter, add the Glycerin, and make up to the required volume with Water.

B. P. Cx.

No. 110.

LOTIO DELPHINII.

Larkspur Lotion.

Delphinium, ground.....	100 gm.
Acetic Acid, U. S. P.....	50 cc.
Alcohol	100 cc.
Glycerin	50 cc.
Water, a sufficient quantity	_____
To make.....	1000 cc.

Boil the ground Larkspur Seed with the Acetic Acid, the Glycerin and 800 cc. of Water for 10 minutes in a covered vessel; set aside till cold, then add the Alcohol and allow to macerate over night. Then filter and add enough water through the filter to make the product measure 1000 cc.

This formula has been constructed by the writer, and is modeled after No. 109. It is supposed that the acetic acid and boiling water extract the alkaloids from delphinium, the chemistry of which is still somewhat unsettled.

This lotion has been sold in the writer's store for several months and has given universal satisfaction to the customers.

Larkspur Lotion has that great advantage over the alcoholic tincture, proposed for N. F. IV, of being much cheaper from an economic standpoint.—O. R.

<>

No. 111.

PROTECTIVE LOTIONS.

Against Sunburn.

A

Almonds blanched	12 gm.
Tincture of Benzoin.....	15 cc.
Orange Flower Water.....	250 cc.
Rose Water, a sufficient quantity	_____
To make.....	1000 cc.

Prepare an emulsion, strain and lastly add the Tincture of Benzoin.

Peter MacEwan in Ph. F. gives the following directions for this Protective Complexion Lotion or Balm for preventing and soothing sunburn:

After washing, apply the lotion freely to the face and neck, wiping dry in one or two minutes. This should be done morning and evening, or oftener.

B

Lotions No. 102, 103, 104 and 105 are also well suited as Protective Lotions against sunburn.

C

MacEwan, in Ph. F., gives the following advice:

As to prevention of sunburn, no protection of a fatty nature should be applied, as in the scorching sun this will cause blistering. For example, application of petrolatum to the face in the morning is soothing at first in the sun, but by the afternoon or evening blisters are prominent. But if a weak glycerin lotion, etc., is applied in the morning, the skin merely becomes red by the afternoon and *then* a liberal application of petrolatum is beneficial.

While the writer agrees with Mr. MacEwan as to petrolatum being unsuitable, he must state, however, that lanolin creams, or cold creams, are in his opinion quite effective as a protection or preventative against sunburn.



No. 112.

SUNBURN LOTIONS.

A

Zinc Oxide.....	30 gm.
Borax	15 gm.
Glycerin	60 cc.
Bay Rum.....	90 cc.
Water, or Aromatic Water, a sufficient quantity	_____
To make.....	600 cc.

Triturate the solids to a fine powder and gradually add the liquids so as to obtain a smooth mixture.

Ph. F.

B

Zinc Oxide.....	40 gm.
Glycerin	
Elder Flower Water	
Rose Water.....	of each 300 cc.
Solution of Cochineal.....	1 cc.
Mix well.	

C

The following can also be used as Sunburn Lotions: No. 56, 57, 61, 61, 79, 85, 91, 100 and 102-105 incl.

D

Linimentum Calcis, U. S. P., is very effective, but still more so is

E

Linimentum Calcis cum Salalo.

Phenyl Salicylate	50 gm.
Linseed Oil	500 gm.
Lime Water	500 gm.

Dissolve the Phenyl Salicylate in the Linseed Oil by agitation and then saponify with the Lime Water.

F

Linimentum Calcis cum Salolo et Mentholo.

Phenyl Salicylate	30 gm.
Menthol	10 gm.
Linseed Oil	500 gm.
Lime Water	500 gm.

Dissolve the Phenyl Salicylate and the Menthol in the Linseed Oil by agitation and then saponify with the Lime Water.

D, E and F have to be well shaken and are applied on pieces of linen saturated with the mixture. E has the advantage of combining Phenyl Salicylate as an antiseptic and F, which was originated by the writer, has the still further advantage of being cooling.

In very severe burns these oils or soaps can be painted on with a camel's hair brush.

O. R.



No. 113.

PREVENTIVE LOTION.

Against Insect Bites, Etc.

A

Oil of Eucalyptus.....	5 cc.
Spirit of Camphor.....	30 cc.
Soap Liniment, a sufficient quantity	_____

To make 60 cc.

Mix.

Ph. J. F.

B

Tinctura Absinthii.
Tincture of Wormwood.

D. A. B. V.

Absinthium	200 gm.
Alcohol, 68 p. c., a sufficient quantity	_____

To make 1000 cc.

This is an excellent preventative as insects literally hate it.

C

Tincture of Wormwood (No. 113 B) 8 cc.
 Glycerin 4 cc.
 Eau de Cologne, a sufficient
 quantity _____
 To make 60 cc.
 Ph. J. F.

D

Oil of Eucalyptus..... 20 cc.
 Oil of Pennyroyal..... 20 cc.
 Spirit of Camphor, a sufficient
 quantity _____
 To make 300 cc.
 Has been successfully used by the writer as
 a mosquito preventive lotion. O. R.

E

Thymol 2 gm.
 Alcohol 50 cc.
 Water 50 cc.
 Dissolve the Thymol in the Alcohol and add
 the Water.

This is an effective lotion which is not oily,
 does not stain and is preferred by particular
 people who object to pennyroyal odor, etc.
 O. R.



No. 114.

MOSQUITO BITE LOTIONS.

Anodyne Sting Lotions.

A

Menthol 5 gm.
 Alcohol 240 cc.
 Stronger Ammonia Water..... 80 cc..
 Dissolve.
 Put one or two drops on the stung part.

B

Saturated Solution of Sodium Bicarbonate.
 Perfume q. s.
 Apply as a lotion.

C

Thymol 2 gm.
 Spirit of Camphor..... 80 cc.
 Stronger Ammonia Water..... 20 cc.
 Dissolve.

According to my experience this lotion is
 very effective as a preventive as well as for
 mosquito bites. O. R.

(To be continued.)

THE WASTE OF INERTIA.

In industrial economy we hear a great
 deal about "waste motion." The biggest
 waste of motion in the world today is the
 motion that is never made.

Humanity's most extravagant and least
 excusable source of waste is inertia. We
 are creatures of habit—we are reluctant to
 act without a precedent. If we bump into
 something new, different, unusual, we simply
 discard it as unbelievable—until someone
 else has tried it out and has got the jump on
 us.

What then? Shall we believe all we hear
 —swallow everything at first sight? Far
 be it! Here's the safe rule, and a very old
 authority; "Prove all things, hold fast to
 that which is good." But how in the name
 of good business judgment can you prove
 anything without inquiry and investigation?
 —*Southern Journal of Pharmacy.*

PELLAGRA.

During 1911 Dr. Louis W. Sambon, Lec-
 turer to the London School of Tropical
 Medicine and Parasitologist to the Well-
 come Research Laboratories, visited the best
 known pellagra centres in Roumania, Tran-
 sylvania, the Austrian Tyrol, the French
 Landes, and Spain. On his travels he col-
 lected much confirmatory evidence of his
 theory arrived at during his researches in
 Italy as Chief of the Pellagra Field Com-
 mission that the disease is propagated
 through the agency of a small biting-fly be-
 longing to the family *Simuliidae*, and not by
 unsound maize. The funds for the first re-
 searches were provided by the Pellagra In-
 vestigation Committee, but subsequently
 they have been defrayed entirely by Mr.
 Henry S. Wellcome.—*The Chemist and
 Druggist.*

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

<>

REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.

200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.

50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.

100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.

200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.

50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.

100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.

200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

DR. WHELPLEY KNOWS.

Dr. H. M. Whelpley says that editors are "we" or "us" because the troubles of an editor are more than one man can bear. After wrestling with the vagaries of linotype composition through ten successive issues of the JOURNAL we are ready to admit that Dr. Whelpley knows what he is talking about.

<>

PROF. J. U. LLOYD AS A WORLDS' FAIR COMMISSIONER.

Governor Judson Harmon, of Ohio, has named Prof. J. U. Lloyd, of Cincinnati, as one of the Ohio commissioners to the Panama-Pacific exposition, to be held at San Francisco to celebrate the opening of the Panama canal. Prof. Lloyd is now on the ground helping to select a site for the Ohio State Building, and incidentally making arrangements for the A. Ph. A. meeting there in 1915. (Perhaps.)

<>

A BELATED CREDIT.

The JOURNAL is indebted to "Paper," the leading organ of the American paper trade, edited by T. J. Keenan, formerly of the American Druggist, for the cut used in the report of the Eighth International Congress of Applied Chemistry, in the October issue, and for portions of the text of that report. Information as to the source of the material was not received in time to give credit when the article was printed.

<>

A JUDICIOUS REWARD OF MERIT.

Wm. A. Holstrom, Ph. G., of Huron, South Dakota, made the highest rating before the Board of Pharmacy of that state in 1912, and as a reward the South Dakota Pharmaceutical Association has nominated him to membership in the A. Ph. A., and has paid his first year's dues. Mr. Holstrom is to be congratulated upon winning so worthy a prize, and the South Dakota Association is to be complimented upon its judgment in making so wise a selection of a prize to offer.

A STRONG EDITORIAL TEAM.

Otto Raubenheimer, of Brooklyn, has been selected as Editor, and Prof. William Mansfield, of the New York College of Pharmacy, as Associate Editor of the Practical Druggist, of New York. The new staff thus represents both theory and practice, a combination that should place the Practical Druggist in class A among drug magazines. Both editors are loyal and active members of the A. Ph. A., and have been frequent contributors in the JOURNAL in the past, as we trust they will be in the future. The JOURNAL, and all A. Ph. A. members wish them the fullest measure of success.



The Bulletin Board

DINNER IN HONOR OF MR. E. H. THIESING.

The Ohio Valley Druggists' Association on Tuesday Evening, September 24th, tendered a surprise Banquet at Meidel's Summer Place to Mr. E. H. Thiesing, in recognition of the splendid services which he has rendered to the drug trade not only in this community, but throughout the country. Every member of the Ohio Valley Druggists' Association who could possibly arrange to be present was in attendance, and the gathering was one of the largest which has ever taken place in the history of the Local Association.

After full justice had been done to the splendid dinner, President Ehlers for the first time intimated the purpose of the occasion, and during a review of the history of the Ohio Valley Druggists' Association, its activities, its importance in the work of the National Association of Retail Druggists, and the services which some of its members had rendered as officers of The National Association, the speaker came to touch in particular upon the unselfish and able services rendered by Mr. Thiesing, and at that point the entire gathering rose spontaneously to sing a song in honor of Mr. Thiesing specially arranged by Mr. Henry J. Dusterberg. It was the very first inkling to Mr. Thiesing that the evening was to be devoted to doing him honor, and consequently his surprise was more than complete. Still fur-

ther surprises however awaited him, and after having to listen to the well deserved praise because of his many efforts in behalf of the retail drug trade, he was finally made the recipient of a beautiful clock set in solid mahogany, as a lasting token of the appreciation and the high regard in which he is held by the entire Association Membership.

After the presentation many of the members present were called on, including Ex-President Kutchbauch, Edw. Voss, Jr., Victor Muhlberg, Ferd Ott, Frank H. Freericks, Otto Groenland, Edwin Heinemann, A. D. Wells, F. W. Kisker, Harry F. Freking, all of whom joined in expressions of high regard for the honored guest. Ex-President Kutchbauch in particular dwelt upon the many notable characteristics of Mr. Thiesing, his devotion to duty, and special fitness for taking a leading position in Association work.

The pleasures of the evening ended with a general resolve to next year re-elect Mr. Thiesing to the Executive Committee of the National Association, which desire was emphasized with three cheers and a tiger.

<>

IMPROVED STATUS OF PHARMACISTS IN THE NAVY.

The Naval Appropriation Bill passed by Congress at its last session contains the following:

"That pharmacists shall after six years from date of warrant be commissioned chief pharmacists after passing satisfactorily such examination as the Secretary of the Navy may prescribe, and shall, on promotion, have the rank, pay and allowances of chief boatswains."

The naval pharmacists of the United States several years ago, by the earnest work of the pharmacists of the whole United States, led by the American Pharmaceutical Association, secured the position and pay of warrant officers and rank in the Navy which carries from \$1,500 to \$2,500 salary a year and warrants by the President.

The Naval Appropriation Bill now causes the naval pharmacists to rank as the other warrant officers, i. e., they will be commissioned and have the rank and pay of ensigns, which is equivalent to second lieutenant on land.

When the American Pharmaceutical Association started their work a few years ago

in behalf of the pharmacists in the United States Navy, the only persons that the said pharmacists outranked were the negro cooks. The rank of warrant officers was secured some time ago, but now for the first time in the history of American pharmacy the chief pharmacists of the American Navy will be commissioned officers.

The pharmacists in the navies of nearly all civilized countries have long held commissions, and in this respect the United States has been very backward.

The work of the American pharmaceutical Association in behalf of the pharmacists in the service of the United States just before the Spanish-American War caused the elimination of foreigners in the United States Army, Navy and Marine Hospital Service, which has so pleased the American public. The association made the argument that the United States Government places should be filled by American citizens, and if capable American citizens could not be secured at the salaries offered, the salaries should be made larger. Congress agreed with the A. Ph. A. and salaries were made larger and foreigners were largely eliminated from the army, navy and marine hospital pharmaceutical service of the United States.

GEORGE F. PAYNE.



HERMANN SCHELENZ.

Hermann Schelenz, the German pharmaceutical historian, was born on April 9, 1848, in Kempen, Posen, near the Russian border. Owing to surroundings he became well acquainted with the Polish and Russian language, besides the native German. He visited the "Realschule" at Breslau, Silesia, and the "Gymnasium" at Krotoschin, and entered pharmacy in 1864 in the "Apotheke" at Carlsruhe, Upper Silesia. His leisure he utilized for pharmaceutical, chemical, botanical and other scientific studies, prepared herbaria for himself and other pharmacists and also obtained distinction by answering a pharmaceutical prize question. In 1867 he passed his state examination as assistant with the mark "excellent." For some years he was employed in the well known pharmacy and laboratory of Lehmann at Rendsburg, a relation to one of the founders of the Philadelphia College of Pharmacy. During the Franco-Prussian war he served at Spandau and through conversation with French pris-

oners learned to speak their language fluently. He graduated from the University Greifswald, being a class mate of E. G. Goetting, a prominent member of the New York Deutsche Apotheker Verein and the American Pharmaceutical Association. At Greifswald he also learned Italian and English and became quite a linguist. Although Prof. Limpricht asked him to become assistant to



HERMANN SCHELENZ, Cassel, Germany.

(Elected Honorary Member of the A. Ph. A., at the Sixtieth Annual Convention.)

the celebrated chemist, Prof. Kraut, at Hanover, Schelenz preferred to stay in retail pharmacy and took charge of the "Apotheke" and laboratory of his former employer, Lehmann, at Rendsburg, and became owner in 1875. He greatly increased his business and also entered the field of manufacturing pharmacy with success. Owing to ill health, he sold his business in 1893, and moved to Cassel, Hessia, and devoted himself entirely to pharmaceutical and especially historical studies. As early as 1870, Schelenz showed his literary abilities and has been a steady contributor to pharmaceutical and scientific literature ever since. In 1878 he published the first "Pharmakognostische Karte" (Phar-

macognostic map to the pharmacopoeias of Europe), which twenty-five years later was enlarged and republished.

Among the great many papers by Schelenz the following are of special interest to the pharmaceutical profession: *Der Apotheker in der Literature* (The Apothecary in Literature), *Decoctum Zittmanni*, *Opodeldoc*, The Soda Process, *Cataplasma Kaolini* (translated by Otto Raubenheimer and published in the A. J. Ph), Runge, the Apothecary, the father of the aniline dyes; *Araberspuren in chemischen Kunstausrücker* (Arabic origin of chemical nomenclature), etc., etc. Schelenz also wrote the history of the *Pharmazeutische Zeitung* and of the *Zentralhalle*, for the jubilee numbers of both journals.

Of late years he has made a special study of Shakespeare and has published a series of papers on the pharmaceutical, chemical and medical knowledge of the poet. Schelenz is also the author of a number of larger works, i. e., *Kosmetik*; *Frauen in Reiche Aesculaps* (Women in the realm of Aesculapius); *Pflanzensammlungen und Kräuterbücher* (Herbaria and Herb Books), etc. His masterwork, however, is "*Geschichte der Pharmazie*." (History of Pharmacy), a book of 1000 pages, a complete history of pharmacy, chemistry, botany and materia medica, from the earliest times to the present day. This "standard" work will remain an everlasting monument to the author. Schelenz has been greatly honored in Germany by being chairman of the committee for the examination of apprentices, chairman of the Schleswig-Holstein Branch of the *Deutsche Apotheker Verein*, member of the Commission for the improvement of the status of pharmacists in the military service, etc., etc. At present he is treasurer of the *Deutsche Gesellschaft für Geschichte der Medizin und Naturwissenschaften* (German Association for the History of Medicine and natural sciences.)

The reputation of Schelenz extends far beyond the "Vaterland." He is a corresponding member of the *Association pharmaceutique de la province de Liège*, an honorary member of the *Société de pharmacie d'Anvers*, and he is well acquainted personally or by correspondence with scientists over the entire world. The American Pharmaceutical Association has honored Schelenz and has also honored itself by electing him an honorary member at the Denver Convention in 1912.

Let us hope that Schelenz, the "father of

pharmaceutical history," will become better known even in America, and that the knowledge of the history of pharmacy will be more appreciated by pharmacists throughout the world.

OTTO RAUBENHEIMER.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or typewritten, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

<>

SAINT LOUIS BRANCH, ANNUAL MEETING.

At the annual meeting of the Saint Louis Branch of the American Pharmaceutical Association held in the Saint Louis College of Pharmacy, 2110 Locust street, on Friday evening, October 18, the present officers were re-elected unanimously to serve another year: President, William K. Ilhardt; First Vice-President, J. A. Wilkerson; Second Vice-President, Arthur C. Schulte; Treasurer, Carl T. Buehler; Secretary, William H. Lamont; Advisory Board, Delta E. Combs, Louis Lieberstein and N. Emery Williams.

Charles Geitner, member of the State Board of Pharmacy, and H. O. A. Huegel, President of the Missouri Pharmaceutical Association, read splendid papers, the subject being "Comments on the Missouri Pharmacy Law," pointing out some of its inconsistencies and technicalities. Many good points were brought out in the discussion led by Professor Francis Hemm and Doctor Leo Suppan.

The next meeting of the Branch will be held in the Saint Louis College of Pharmacy on Friday evening, November 22.

WILLIAM H. LAMONT, Secretary.

NASHVILLE BRANCH.

The Nashville Branch of the A. Ph. A. met in regular session October 10, 1912, in Furman Hall at Vanderbilt University, with President J. O. Burge in the chair.

The meeting was devoted almost exclusively to a discussion of plans for the entertainment of the American Pharmaceutical Association meeting here next year.

A general entertainment committee was appointed with Dr. E. A. Ruddiman as chairman which included every member of the A. Ph. A. in the state of Tennessee.

From this general committee the necessary sub-committees will be selected.

The Branch decided to recommend the Council the week beginning August 25, 1913, as the date of the annual meeting of the Association, the weather usually being very pleasant at that time of the year. A tentative program was decided on which has been sent to Secretary Beal for criticism or approval.

Ira B. Clark and W. R. White were appointed a committee to select a suitable hall and make the other necessary arrangements for having a get-together-meeting of all the druggists of the city, together with their wives and sweethearts.

An invitation was accepted to attend the next meeting of the Nashville Branch of the American Chemical Society Friday night, October 18, at Furman Hall, when interesting papers will be read by Dr. E. A. Ruddiman and R. W. Balcom, both noted chemists in the U. S. Pure Food Service.

WILLIAM R. WHITE, Secretary.



CHICAGO BRANCH.

The Chicago Branch of the American Pharmaceutical Association held its first Branch meeting of the season, Tuesday evening, October 15, at the University of Illinois School of Pharmacy. The feature of the evening was a very interesting talk by Professor Clark, who showed a large number of pictures taken by him and Professor Snow during the recent Convention in Denver, these being projected on the screen by the new Balopticon made by the Bausch & Lomb Optical Company, and in charge of Mr. Skelton.

A Committee on Program was appointed by President Wells consisting of Professor A. H. Clark, Professor C. W. Patterson and Mr. C. H. Avery. Several of our members pres-

ent gave in brief form their impressions of the recent Convention in Denver and discussed the new phases of Association work which were developed there, especially the newly created House of Delegates, its functions and its prospects. President Wells spoke of the honor paid to the Chicago Branch in the installation of its Secretary as President of the Association and referred to the fact that Mr. F. W. Meissner and Mr. S. K. Sass, both of whom were present at the Branch meeting, are nominees for the office of President and Third Vice-President, respectively; that Professor Snow had been elected First Vice-Chairman of the House of Delegates and Professor Clark, President of the Conference of Pharmaceutical Faculties.

Secretary Day was authorized to set the date for the November meeting after consultation with other local organizations, so as to avoid a conflict of dates.

About thirty members of the Branch and their ladies were present at this meeting, and the officers feel much encouraged over the outlook for the season.

W. B. DAY, Secretary.

CITY OF WASHINGTON
BRANCH.

The October meeting of the local branch of the American Pharmaceutical Association was held October 16, 1912, at the National College of Pharmacy, with President Lewis Flemer presiding.

A communication from the president of the Association, urging the cooperation of the members of the local branch in the efforts of the Association to increase its membership, was read and received, and upon the motion of Dr. Hilton, seconded by Dr. Richardson, the secretary was directed to prepare a list of druggists in Washington who would make satisfactory members of the Association.

Following the disposition of routine business, Dr. W. S. Richardson presented and read a paper reviewing the convention of the N. A. R. D. held at Milwaukee and that of the American Pharmaceutical Association at Denver. His report was accepted and made a part of the minutes of the meeting.

Dr. Richardson, in addition to presenting his report, discussed, informally, the progress that had been noted at each of these conventions, and commented very favorably

upon the reception which was given the delegates to both of the conventions in the cities where they were held.

Following Dr. Richardson's paper, Dr. M. I. Wilbert read a paper reviewing the proceedings of the Eighth International Congress of Applied Chemistry.

The last paper of the evening was that of Dr. L. F. Kebler, who reported the progress made at the last annual meeting of the Association of Official Agricultural Chemists, with particular reference to that part devoted to pharmaceutical chemistry.

Dr. Kebler, in addition to presenting his report, discussed numerous problems which had confronted this Association with regard to foods, insecticides, and fertilizers.

The meeting was one of the most interesting that has ever been held by this local branch, and all of the papers were treats.

Dr. S. L. Hilton will read at the November meeting a paper on habit-forming drugs, and in addition thereto a discussion of the influence of commercialism in pharmacy will be had.



PHILADELPHIA BRANCH.

The first regular meeting of the Philadelphia Branch, A. Ph. A., was held conjointly with that of the Scientific Section on Tuesday evening, October 1, 1912, at 8:15 o'clock, at the Engineers' Club, 1317 Spruce street.

The change in location of meeting place was made in response to several suggestions as to the greater convenience of a more centrally located room than that formerly engaged for our meetings.

The following program was presented:

"The New House of Delegates of the A. Ph. A.," by Mr. J. W. England.

"The New Section on U. S. P. and N. F.," by Mr. E. Fullerton Cook.

"The Scientific Work of the Denver Meeting, A. Ph. A.," by Mr. C. E. Vanderkleed.

"The Work of the Section on Education and Legislation," by Mr. John C. Wallace.

"Results Achieved at the Convention, P. Ph. A.," by Mr. Charles H. Lawall.

"The Work of the N. A. R. D. at Milwaukee," by Mr. S. C. Henry.

"The Convention of the American Medical Association," by Dr. F. E. Stewart.

An encouraging start was made at the first meeting by the election to membership of two prominent pharmacists, namely, Prof. John H. Sturmer, the new incumbent of the Chair of Pharmacy at the Medico Chirurgical College, and Mr. Robert W. Fischelis, who is connected with the same institution.

Mr. Franklin M. Apple was elected member of Council A. Ph. A. in place of Mr. Robert Cadmus, resigned.

Mr. England's contribution—printed in full elsewhere—occasioned considerable discussion, some of the members expressing the opinion that the personnel of the new House of Delegates might be more or less undesirable, and further, that such a body was in danger of becoming altogether unwieldy.

Mr. E. Fullerton Cook, in reporting the new section on U. S. P. and N. F., suggested by Dr. Oldberg, stated that the suggestion was tentatively tried out at the Denver meeting, by setting aside one session of the Scientific Section. Three important papers were presented at the session, all being related to the progress of revision of the two books. The speaker stated that a tremendous volume of communications had been circulating between the members of the several committees and that the work of revision was well advanced. N. F. IV is practically ready to be issued, but the Committee recommended that the publication be delayed so that it may appear simultaneously with U. S. P. IX, for the following reasons: Preventing duplication of titles; harmonizing all requirements of a general nature, such as methods for taking physical constants, carrying out sterilization, etc.; avoiding an immediate revision of N. F. IV to include articles requiring standardization which may be deleted from U. S. P., allowing the satisfactory completion of Part II N. F., by including definitions and tests wherever needed.

The advantages of the new section having been demonstrated during this trying-out session, a resolution recommending a permanent section on U. S. P. and N. F., was unanimously adopted.

Prof. Charles H. LaWall, reporting the convention of the P. Ph. A., described the meeting as being a harmonious blending of affairs social, scientific and legislative, the latter being harmonious in spots, however, since there seemed to be much diversity of opinion as to what was really desirable in the way of legislation. The speaker was doubt-

ful that any effective legislation was imminent because of the varying ideas of the members of the State Association. Many excellent papers were presented, the result of the diligent efforts of Chairman Stroup, and altogether the Pennsylvania meeting was an eminently successful one.

In the absence, on account of illness, of Mr. S. C. Henry, an interesting report of the N. A. R. D. convention was made by Mr. Charles Rehfus, who described it as a good meeting with Philadelphia well represented. He referred to the honors which came to Pennsylvania in the selection of the President and a member of the Executive Committee from its ranks of pharmacists, and said much credit was due to the loyal enthusiasm of the Pennsylvania delegates. The speaker stated that the apparent decrease in membership was due to the fact that only paid up members remained on the list of members. Propaganda work was to be taken up and pushed vigorously all over the country, and price protection was still in the formative stage.

With Dr. Kimberly in the Chair, Dr. Stewart gave an interesting outline of the work of the Section on Pharmacology, at the A. M. A. convention. Much argument had been brought forth over the limitations of materia medica, some counselling a very restricted list, while others argued in favor of the "open door." This topic, and that of patents and trade marks, consumed much of the time of the Section, and the general tendency was in the direction of a sensible solution of the problems.

Messrs. Wallace and Vanderkleed, being unavoidably absent, their contributions were not presented.

Among those taking part in the discussions were Messrs. Stroup, Cliffe, Apple, Boring and Brinton.

AMBROSE HUNSBERGER, Sec'y.

<>

PITTSBURGH BRANCH.

The first of the series of meetings of the Pittsburgh Branch of the American Pharmaceutical Association for 1912-13 took place Friday evening, October 11, at the College of Pharmacy. President Wm. B. Day, of Chicago, who is at the head of the parent association showed his deep interest in this

Branch in a communication read by the secretary in these kind words: "About this time of year your Branch holds its first meeting of the winter season. I extend my greeting and best wishes for a successful year for the Pittsburgh Branch. I hope that you will be able to interest a larger number of pharmacists than ever before and that you may materially add to your membership."

Dr. J. A. Koch presented a deeply interesting report of the work accomplished and underway of the American Conference of Pharmaceutical Faculties, which clearly indicates that in the near future that any pharmacist who graduates from a reputable school of pharmacy will, owing to the constantly added pre-requisite requirements that are being laid down, have surely earned his degree. The Conference proposes that before conferring the degree of Graduate in Pharmacy a student will have to have a three years course of instruction. That to earn the degree of Doctor of Pharmacy the recipient must have received four year's instruction.

Dr. Louis Emanuel in reporting the meeting of the American Pharmaceutical Association held in Denver, said it is difficult for one to cover the ground for reason that so many sections covering different branches of the work are all held simultaneously, hence no fellow can possibly take them all in, and consequently one must necessarily elect which section will interest him most and stay with that section and depend upon the printed reports for what the others may have done, and he would leave that method to the members present. However he might say something of interest concerning his trip to Denver and give his impressions of the western country. He expressed disappointment at not having realized the anticipations he had formed of the gold country. Instead of finding the precious metal lying about loose on the ground he was surprised to learn that it was just as difficult to get hold of, and the formula for each fellow securing his share, the same as he had always found it at home.

The N. A. R. D. convention at Milwaukee was reported upon by B. E. Pritchard, who touched only upon those issues of most vital interest to members of the Branch, which included the progress of the U. S. P. and N. F. propaganda for reform in the practice of prescription writing, the reports of what had

been accomplished during the year in Pharmacy laws, national legislation and fraternal relations between the various organized bodies in pharmaceutical affiliation. These subjects he brought out in most of their most instructive details.

Discussion of proposed Pennsylvania Pharmacy Legislation was the most important and liveliest feature provided in the program for the session and it was opened by B. E. Pritchard who laid before the members present those features of the proposed bill which have provoked the strongest opposition and endeavored to show the reasons for their being incorporated and to point out the beneficial results that are sure to obtain if the proposed act becomes a law. Those who participated in the discussion were Drs. Judd, Emanuel and Koch, President Andrew Campbell and several of the senior students of the College of Pharmacy.

Dr. Judd fears that the medical fraternity will oppose the bill because of that provision which aims to compel a dispensing physician when dispensing official preparations to supply only such as conform to official requirements, and that a change in the reading may provoke less antagonism from that source. Dr. Judd offered as a motion that the following amendment be made: That section 18, line 21 read "That drugs purchased for dispensing and administration shall conform to the standards of strength, quality and purity as fixed by the laws of this Commonwealth." The motion was supported by Dr. Koch and the resolution approved.

Dr. Koch moved, supported by Dr. Emanuel, that it is the sense of the Pittsburgh Branch of the A. Ph. A. that an amendment be adopted that will permit the sale of heavy chemicals, such as are usually sold by storekeepers, under the law without applying for a license. This motion was approved. Dr. Emanuel suggested that such articles as are meant by the title "heavy chemicals" be enumerated in the act.

Several queries of a practical nature found in the Question Box were taken up and the information sought for by the querists referred to any one present competent to answer. One only was satisfactorily disposed of, the others referred for research results to be reported at next meeting. President Campbell urged those present to bring before the Branch any problem pertaining to pharmacy

or drug store practices for elucidation, and that druggists be requested to send to the secretary any question upon which information may be useful.

B. E. PRITCHARD, Secretary.



NEW YORK BRANCH.

A regular meeting of the New York Branch of the American Pharmaceutical Association was held on the evening of October 14th, with Chairman G. C. Dickman presiding and seventeen persons present.

The minutes of the preceeding meeting were not read. The report of Treasurer Joseph Weinstein was duly received.

For the committee on the progress of pharmacy Otto Raubenheimer gave the salient features of the following recent contributions to periodical pharmacal literature: A report of a committee of the Austrian government investigating the influence of cultivation upon oil of peppermint; a paper on "The Manufacture of Tablets by the Pharmacist" (*Pharm. Post*); a collection of formulas for nostrums (*Centralb. d. Pharm.*); "Comments on the Austrian Pharmacopoeia" from the laboratory of G. Hell & Company (*Pharm. Post*); a contribution on the toxicity of methyl alcohol, by Hausmann (*Pharm. Post*); a report of the first congress of the pharmacists of Poland (*Pharm. Post*); a reported new adulterant of tyrolean saffron; a review of twenty-five years' progress in synthetic medicines in Germany; a paper before the Brussels Pharmaceutical Society, in which the author favored the return of used medicine bottles to the pharmacist because the latter could sterilize them and thus lessen the danger of their subsequent use; and an account of an unsuccessful attempt to declare illegal the use of the name "artificial Carlsbad salt" in Hungary.

There was considerable discussion of the matter of the reuse of medicine bottles. This developed into an interesting talk on the bacteriological contamination of utensils generally. Messrs. Diner, Raubenheimer, Lehman, Unna, Anderson, Arny, and others contributed to this discussion, and the ubiquitousness of the bacterium was variously declared.

Supplementary to the report of Mr. Raubenheimer, Prof. H. V. Arny made a number of brief references to articles recently ap-

pearing in the *Journal Suisse de Chemic et Pharmacie*. One of these having to do with the antiformin method of precipitating tubercle bacilli in the examination of sputum, was discussed by Messrs. Weinstein, Diner, and Roemer, all of whom had for some time been using modifications of the method described.

Prof. William Mansfield remarked in connection with a reference to the microscopy of honey, made by Prof. Arny, that the department of agriculture had issued some very interesting pamphlets about honey.

Secretary Hugh Craig reported briefly for the special committee on a plan for the certification of pharmacies. This committee held its third meeting October 22nd, and will meet with the committee of the Medical Society of the County of New York at an early date.

Prof. W. C. Anderson pointed out the salient features of the N. A. R. D. meeting at Milwaukee. He called particular attention to the indication of a desire on the part of that organization to work in close co-operation with the A. Ph. A. and to the firm stand taken against the unrestricted sale of narcotics. Several of the more important resolutions adopted at the convention were read by Prof. Anderson who likewise gave a synopsis of the work of the association in the legislative, telephone, and propagandic field.

Secretary Craig related some of the impressions left upon him by the Denver meeting of the A. Ph. A. The formation of a House of Delegates, the organization of a Section on Pharmacopoeia and National Formulary, and the inception of a national legislative conference, were to him the most important features of the meeting. It was his opinion that the House of Delegates would add to the complication already existing in the procedure of the annual meetings; that the invitation to delegates would bring about a multitude of resolutions now unthought of; and that the sessions of the House would attract members to the disadvantage of the regular Sectional meetings. Mr. Craig recounted several other interesting actions of the meeting, spoke of the gratifying financial condition of the association, and pointed out that the branch had six members in the new official family of the parent organization.

Otta Raubenheimer gave a general review of the Eighth International Congress of Ap-

plied Chemistry, and told somewhat in detail the proceedings of the Section on pharmaceutical chemistry. He pointed out that a well-known member of the A. Ph. A., Prof. J. P. Remington, had been chairman of the Section; that the vice-chairman, Prof. Virgil Coblentz, and the acting secretary himself, were members of the Branch; and that members of the Branch and parent organization constituted the large majority of those contributing papers.

Prof. Anderson called attention to the fact that druggists were liable to be prosecuted under the child labor law because of ignorance of the provisions of that statute. He said that inspectors were busy looking for infractions of the law; and that, not even in an emergency, could a druggist employ as a messenger, for instance, a child under the age of fourteen years at any time, or one under the age of sixteen before 8 o'clock in the morning or after 7 o'clock at night. Children between the ages of fourteen and sixteen could be employed in the day time if they had the proper certificate from the board of health and this was on file with the employer.

The Branch adjourned at 11:10 o'clock, to meet November 11th.

HUGH CRAIG, Secretary.

Council Business

COUNCIL LETTER No. 1.

Philadelphia, October 21, 1912.

To the Members of the Council:

The following letters have been received by the Secretary of the Council:

C. Lewis Diehl: "Acknowledging your letter of 29th inst., I wish to express my profound appreciation of the honor, which has been extended to me by the vote of the American Pharmaceutical Association, directing you to convey to me its cordial greetings and wishes for my welfare. I thank you!"

Edward Kremers: "Your letter dated September 19th was duly received and should have been replied to sooner had it not been for the large amount of work incident to the opening of another academic year. I desire to express my appreciation of the action on the part of the Council. I note what you say with regard to the storage of the historical material belonging to the A. Ph. A., and

will await further communication from Secretary Beal."

Thomas F. Main: "I have your notification of my election as Honorary President of the American Pharmaceutical Association. Be kind enough to convey to the members of the Council my sincere thanks for this mark of their esteem, and assure them of my great appreciation of the honor conferred upon me. That our officers and members may continue to work together for the advancement of our beloved Association into ever widening fields of usefulness is my earnest hope."

Insurance Policies.—General Secretary J. H. Beal has turned over to Treasurer H. M. Whelpley, Fire Insurance Policy No. 42,240 in the Michigan Fire and Marine Insurance Co., covering \$500.00 insurance on type, books, etc., expiring, June 28, 1913. The premium is \$2.75. Also Fire Insurance Policy No. 1564 in the Hartford Fire Insurance Co., covering \$1500.00's insurance on books and printed matter, expiring October 18, 1914, the premium being \$15.00. Also Fire Insurance Policy No. 137 in the Aetna Insurance Co., covering \$1500.00 on books and printed matter expiring October 30, 1914, the premium being \$15.00.

These policies have been placed in the A. Ph. A. safe deposit box at the Title Guaranty Trust Co., St. Louis.

President J. G. Godding in his annual address at the Denver (1912) meeting (Journ. A. Ph. A. September, 1912) stated that:

"At the present time the Department of Pharmaceutical Formulas has published 100 recipes in the Journal of the American Pharmaceutical Association. Many are in local use. Heretofore, when needed they were not to be found without much searching and then with varying success as to reliable directions in compounding. It seems desirable that these formulas should be the forerunner of the American Pharmaceutical Association Recipe Book; the publishing of such a book would probably add prestige and revenue to this Association."

With reference to the recommendation, the Committee on President's address reported as follows:

The recommendations of the Committee was adopted by the General Session on August 21, 1912 and the question is now before the Council.

It will be recalled that a Committee on A. Ph. A. Recipe Book reported to the Council on May 8, 1911 (A. Ph. A. Bulletin 1911, 261) making recommendations on the

advisability of publication, scope and character, and plans and details of publication; and it was decided that these formulas should first be published in a department on pharmaceutical formulas in the new journal of the A. Ph. A. before publication in book form. This has been done.

What is the wish of the Council with reference to publishing the formulas in book form?

Motion No. 1: (Purchase of Pamphlet Cases).—Moved by J. W. England, seconded by J. H. Beal, that the General Secretary be authorized to purchase one hundred (100) Pamphlet Cases for the preservation of pamphlets and other documents now at the General Secretary's office. The appropriation has been approved by the Finance Committee.

Motion No. 2: (Election of Members).—You are requested to vote on the following applications for membership:

"The recommendation that the Association undertake the publication of the Book of Recipes, of a popular character, covering a wide range, is approved, and the Council is recommended by the Committee to take the necessary steps to carry this recommendation into effect, due care being exercised in the compilation of the recipes so that they may prove uniformly reliable."

No. 1. James Martin Barclay, Sgt. U. S. Army, Hosp. Corps, Camp Downes, Manila, P. I., rec. by W. B. Day and C. C. Young.

No. 2. Elden Barker Davis, Ebensburg, Pa., rec. by Fred J. Blumenschen and A. F. Judd.

No. 3. M. E. Jaffa, Director, Bureau of Food and Drugs, State Board of Health, University of California, Berkeley, Cal., rec. by J. H. Beal and J. W. England.

No. 4. Angelus Andrew Battista, Sussex St., Tenino, Wash., rec. by J. H. Beal and J. W. England.

No. 5. Edward H. Jenkins, Drawer 1, New Haven, Conn., rec. by J. H. Beal and J. W. England.

No. 6. Harry Cook, Sgt. Hosp. Corps, Military Hospital, Augur Barracks, Jolo, P. I., rec. by Arthur Neville and Carl T. Benche.

No. 7. Francis Joseph Stuart, 3964 Wyoming St., St. Louis, Mo., rec. by Delta E. Combs and J. W. Mackelden.

No. 8. Harley Dale Starkey, Scio, Ohio, rec. by J. H. Beal and J. W. England.

No. 9. Andrew H. Beardsley, 117 W. Franklin St., Elkhart, Ind., rec., by J. H. Beal and J. W. England.

No. 10. Romaine Pierson, 108 Fulton St., New York, N. Y., rec. by Otto Raubenheimer and J. H. Beal.

No. 11. George Frederick Freymark, 513

Merchant St., Ambridge, Pa., rec. by J. A. Koch and Fred J. Blumenschein.

No. 12. Curt Louis Dauber, Mascoutah, Ill., rec. by H. M. Whelpley and J. W. Mackelden.

No. 13. James William Morrison, 310 W. Washington St., Chicago, Ill., rec. by Wm. B. Day and E. N. Gathercoal.

No. 14. Edwin John Backus, Ph. G., 2403 W. North Ave., Chicago, Ill., rec. by F. W. Meissner and J. H. Beal.

No. 15. Ernest C. Finch, Waverly, Tenn., rec. by J. O. Burge and Wm. R. White.

No. 16. Michael Henry Corrigan, 1654 Westminster St., Providence, R. I., rec. by William O. Blanding and James O'Hare.

No. 17. Nicholas F. Reiner, 1 Westminster St., Providence, R. I., rec. by William O. Blanding and James O'Hare.



A. PH. A. COUNCIL MEMBERS

1912-13.

Alpers, William C., 495 Columbus Ave., New York, N. Y.

Apple, Franklin M., 31st and Berks St., Philadelphia, Pa.

Asher, Philip, 1606 St. Charles Ave., New Orleans, La.

Beal, James H., Scio, Ohio.

Burge, John O., 303 8th Ave., S., Nashville, Tenn.

Clark, Albert H., 74 E. 12th St., Chicago, Ill.

Day, William B., 74 E. 12th St., Chicago, Ill.

Diehl, C. Lewis, 932 Cherokee Road, Louisville, Ky.

Eberle, Eugene G., 1804 Jackson St., Dallas, Tex.

Eldred, F. R., 3323 Kenwood Ave., Indianapolis, Ind.

England, Joseph W., 415 N. 33rd St., Philadelphia, Pa.

Floyd, Henry B., 1840 U St., N. W. Washington, D. C.

Ford, Chas. M., 1236 Ogden St., Denver, Col.

Godding, J. G., 278 Dartmouth St., Boston, Mass.

Godbold, Fabius C., 2734 Prytania St., New Orleans, La.

Good, James M., 2601 Olive St., St. Louis, Mo.

Hopp, Lewis C., 1104 Euclid Ave., Cleveland, Ohio.

Ilhardt, William K., 4836 Delmar Blvd., St. Louis, Mo.

Koch, J. A., College of Pharmacy, Pittsburgh, Pa.

LaPierre, E. H., 96 River St., Cambridgeport, Mass.

Lascoff, J. Leon, Lexington & 83rd Sts., New York, N. Y.

Main, Thos. F., 166 Chambers St., New York, N. Y.

Martin, John A., 930 15th St., Denver, Col.

Mayo, Caswell A., 66 W. Broadway, New York, N. Y.

McElhenie, Thos. D., 259 Ryerson St., Brooklyn, N. Y.

Packard, C. Herbert, 7 Central Square, Boston, Mass.

Payne, George F., 50 Armstrong St., Atlanta, Ga.

Pease, Autumn V., 408 Fourth St., Fairbury, Neb.

Remington, J. P., 1832 Pine St., Philadelphia, Pa.

Rusby, H. H., 776 De Graw Ave., Newark, N. J.

Sayre, Lucius E., University of Kansas, Lawrence, Kans.

Teeters, Wilber J., Iowa College of Pharmacy, Iowa City, Ia.

Thomas, John B., Baltimore & Light Sts., Baltimore, Md.

Whelpley, Henry M., 2342 Albion Place, St. Louis, Mo.

White, William R., 314 Hancock St., Nashville, Tenn.

Wulling, F. J., University of Minnesota, Minneapolis, Minn.

Very truly yours,

J. W. ENGLAND,
Secretary of the Council.

415 N. 33rd St.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,

From 2342 Albion Place, St. Louis, Mo.
To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

FONTEYNE, G. J.,

From Corregidor, P. I.
To Ft. Wint, P. I.

REITER, H. L.,

From San Antonio, Tex.
To Camp Ward Cheney, Cavite, P. I.

HICKS, J. E. F.,

From Atlanta, Ga.
To Care Hicks & Hawley Druggist, Goldsboro, N. C.

KEENAN, T. J.,

From 66 W. Broadway, N. Y. City, N. Y.
To 751 E. 19th St., Brooklyn, N. Y.

ALACAN, J. P.,

From Havana, Cuba.
To 4528 Chestnut St., Philadelphia, Pa.

DUIGNAN, INO.,

From Ft. Duchesne, Utah.
To Residence unknown.

EISELE, GEO.,

From Chicago, Ill.
To Cortland Apartments, Louisville, Ky.

TAYLOR, W. T.,

From 100 Maine St., Quincy, Ill.
To 500 S. 8th St.

NEVILLE, A.,

From Ft. Mackenze, Wyo.
To Military Hosp. Augar Barracks, Jolo, P. I.

MILLER, F. A.,

From 1939 Ashland Ave., Indianapolis, Ind.
To 534 E. 29th St.

BRUDER, O. E.,

From 1021 Wolfram St., Chicago, Ill.
To 2808 Sheffield Ave.

BRUNDAGE, A. H.,

From 451 Gates Ave., Brooklyn, N. Y.
To 375 Gates Ave., Brooklyn, N. Y.

GERALD, H. F.,

From Haverhill, Mass.
To Creighton Univ., Omaha, Neb.

SCHLOTTERFECK, J. O.,

From Ann Arbor, Mich.
To 266 Westminster Road, Rochester, N. Y.

STARRH, THOS. M.,

From Shoshone, Idaho.
To Boise, Idaho.

TAYLOR, F. O.,

From 659 2nd St., Detroit, Mich.
To 53 W. Alexanderine, Detroit, Mich.

WUNDERLICH, E.

From 1415 Dryades, New Orleans, La.
To 1532 Dryades St., New Orleans, La.

BAER, EDW. A.,

From Bakersfield, Cal.
To 1405 Call Bldg., San Francisco, Cal.

FORD, ROBERT E.,

From Chicago, Ill.
To Residence unknown.

GERSTENZANG, A.,

From Angel Island, Cal.
To Residence unknown.

KARLSON, I. N.,

From Margosatubig, P. I.
To Residence unknown.

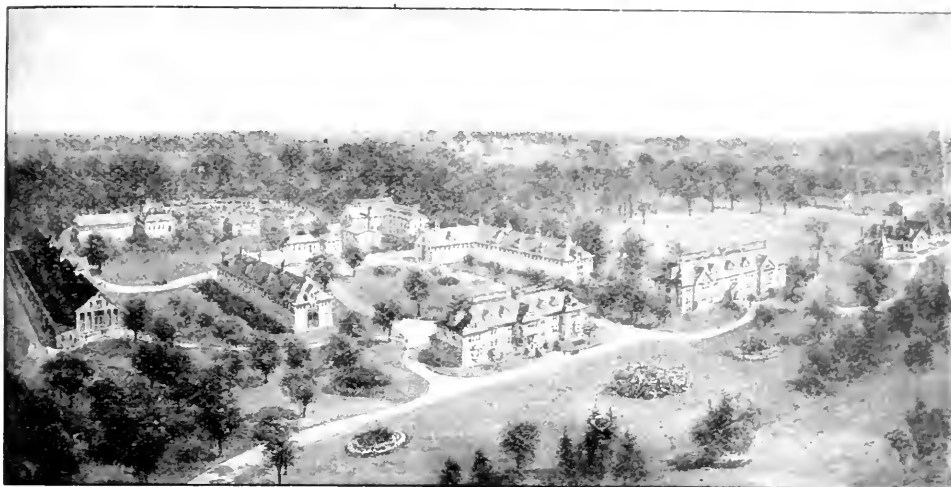
NEWCOMB, E. L.,

From 527 5th Ave., S. E., Minneapolis, Minn.
To 719 6th Ave., S. E., Minneapolis, Minn.

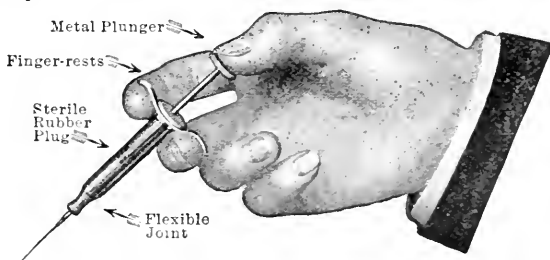
EXPENSIVE ADVERTISING.

The most costly advertising that you can use is advertising that misrepresents your goods. When you make a false statement in an advertisement you make it where the largest possible number of people will be examining it for flaws. The more readers there are of the ad that tells what is not true, the more there will be who will put you down as a fraud and hold you up as a fakir. Somebody said once, "It is better not to know so much than to know so much that is not so." Well, it is also better not to tell so much than to tell anything that is not true.—*The Spatula.*

The Mulford Biological Laboratories



All Mulford Antitoxins, Serums, Bacterins, Vaccines, Tubercuins, etc. are prepared under the personal direction of experts. Our Laboratories at Glenolden, Pa., U. S. A., are operated under Government license and inspection. Rigid standardization, with bacteriologic and physiologic tests insure uniform reliability.



Every dose of Antitoxin, Curative Serums and Bacterins is furnished in a perfected aseptic glass syringe, with flexible needle joint, positive working piston, finger-rests—ready for instant use.

The Ideal Antitoxin and Bacterin Container

Diphtheria Antitoxin—Concentrated

Furnished in aseptic glass syringes, containing 1000, 2000, 3000, 4000, 5000, 7500 and 10,000 units.

Tetanus Antitoxin

Furnished in aseptic glass syringes, containing 1500, 3000 and 5000 units.

Anti-Dysenteric Serum

For Summer Diarrhea and Dysentery.

In aseptic glass syringes, containing 10 c.c.

Anti-Meningitis Serum

(Anti-Meningococcic Serum)

In packages containing 2 aseptic glass syringes of 15 c.c. each, including special needle for intraspinal injection.

Anti-Pneumococcic Serum

In packages containing 2 aseptic glass syringes of 10 c.c. each.

Anti-Streptococcic Serum

In aseptic glass syringes of 10 c.c. each, and in 20 c.c. packages (2 aseptic glass syringes of 10 c.c.)

H. K. Mulford Company, Philadelphia

New York
Chicago

St. Louis
Atlanta

New Orleans
Kansas City

Minneapolis
San Francisco

Seattle
Toronto

PHILADELPHIA COLLEGE OF PHARMACY

FOUNDED 1821

Offers a complete course in Pharmacy, Chemistry, Materia Medica, Botany and Pharmacognosy leading to the degree of Doctor in Pharmacy.

Also instruction in special branches and Post Graduate work.

For full information regarding entrance requirements, tuition, etc., address

J. S. BEETEM, Registrar, 145 N. 10th St., Philadelphia, Pa.



When your customers ask for
Cement they want

MAJOR'S CEMENT

It mends everything and
sticks to everything but
the druggist's shelves.
Sells too fast to stick there.

Send for advertising matter
and free offer

**Major Manufacturing
Company**

461 Pearl St., NEW YORK CITY

SPECIAL ATTENTION.—Drug stores (snaps) for sale and trade in 48 states. Drug stores handled. Drug jobs in 48 states. Physicians, dentists, veterinarians, nurses furnished and located. Established 1904. Strictly reliable. Gilt edge references. Let me know your wants. F. V. KNIEST, R. P., Omaha, Nebr.

United States Pharmacopoeia

EIGHTH REVISION

Cloth \$2.50

Sheep \$3.00

Any Book Dealer or Wholesale Druggist

The Easiest Way

AND ALSO THE CHEAPEST AND BEST WAY TO MAKE
SOLUTION CITRATE OF MAGNESIA U. S. P. IS TO MIX

Milk of Magnesia S & D - - - 3 1/8 fl. oz.
Citric Acid - - - - - 1 oz. and 72 gr. av.
Syrup Citric Acid - - - - - 2 fl. oz.
C. T. Potassium bicarb, 40 gr. S & D 1 - tablet
Distilled water - - - - - q. s. to 12 fl. oz.

Dissolve the Citric Acid in 6 fl. oz. of distilled water, and the Milk of Magnesia, shake until dissolved, add the Syrup Citric Acid, filter if necessary, add the tablet of Potass. bicarb. and stopper quickly.

OUR MILK OF MACNESIA carries more of the hydroxide than any other made and separates least and last. Compare our product and prices with all others and you will surely specify S & D on your next order.

SHARP & DOHME, Baltimore

New York

Chicago

St. Louis

Atlanta

New Orleans

Philadelphia

The Roessler & Hasslacher Chemical Co.

100 William Street, New York

Invite the attention of the Pharmaceutical Profession to their new series of

Peroxygen Products, or Active Oxygen Preparations

VIZ:

SODIUM PERBORATE, a powder which, dissolved in water, furnishes instantaneously Hydrogen Peroxide Solution of alkaline reaction, a non-irritant to mucous membrane, even if applied in powder form. The powder is eight times as strong as ordinary H_2O_2 .

ZINC PEROXIDE, odorless fine powder, antiseptic, bactericide, used in surgery, dermatology, etc.

MAGNESIUM PEROXIDE, for internal use, non-toxic tasteless powder, it replaces bismuth salts in intestinal disinfection.

CALCIUM PEROXIDE, antacid and germicide.

STRONTIUM PEROXIDE, a dermatological agent.

PEROXIDE ZINC SOAP, U. S. Patent 787776, "Life to the Skin," contains actually 10% ZnO_2 , the only real Peroxide Soap, complying with requirements of National Pure Food and Drugs Act. An ideal Skin and Toilet Soap.

All the above have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

ORDERS FILLED BY THE WHOLESALE DRUG TRADE.

To Colleges of Pharmacy

Do you know that we make a specialty of importing "DUTY-FREE" glassware, apparatus and chemicals for colleges and universities—sending our own representative abroad each year to make our selections?

Do you realize that the German glassware is immensely superior to the American product, and costs much less?

Do you realize how little trouble it is to import your goods? No more than to order from a local dealer.

Tell us what you want—select from any catalogue—and we will quote figures that will surprise you.

THE KAUFFMAN-LATTIMER CO.

COLUMBUS, OHIO



N.Y.Q.

QUININE BIHYDROCHLORIDE WITH UREA
STRONTIUM BROMIDE, C.P.
DIACETYL-MORPHINE
MORPHINE QUININE
COCAINE
ACETANILIDE, C.P.
THYMOL IODIDE
POTASSIUM IODIDE
STRYCHNINE
BISMUTH SUBMIT

The God of Commerce does not extend an absolute sway over our business. We recognize an ethical obligation in the preparation of

N. Y. Q. PRODUCTS

and strive to live up to it. It is our pleasure as well as our duty to maintain the Purity of our goods, and we look to your support for commendation of our efforts. :: :: ::

412

New York Quinine and Chemical Works, Ltd. New York City.

THE SCHOOL OF PHARMACY of the UNIVERSITY OF ILLINOIS

CHICAGO COLLEGE OF PHARMACY

The Fifty-third session begins September 17, 1912.

Courses leading to the degree of Graduate in Pharmacy and of Pharmaceutical Chemist are offered.

For announcement or other information, address

W. B. DAY, Actuary

Michigan Boulevard and Twelfth Street, Chicago, Illinois

PITTSBURGH COLLEGE OF PHARMACY SCHOOL OF PHARMACY UNIVERSITY OF PITTSBURGH

Offers a two years course leading to the degree of Graduate in Pharmacy.
Three years for the degree of Doctor in Pharmacy.

For catalogue address Dr. J. A. Koch, Dean, Pittsburgh, Pa.

DEPARTMENT OF PHARMACY—UNIVERSITY OF MARYLAND (MARYLAND COLLEGE OF PHARMACY 1841-1904)

Lombard and Greene Sts., Baltimore Md.

Complete Course of Lectures and Laboratory Instruction, covering two sessions of thirty-two weeks each. Catalogue giving full information mailed on application to the Dean.



HORLICK IS THE ORIGINATOR OF MALTED MILK

As a result of years of continuous advertising
HORLICK popularized it and created the demand

Attractive Fountain Advertising Hot or Cold Drinks on request
Horlick's Malted Milk Company, Racine, Wis.

MASSACHUSETTS COLLEGE OF PHARMACY

CORNER OF ST. BOTOLPH AND GARRISON STREETS : : : : BOSTON, MASS.

The year begins the last week in September and ends the third in May.

Offers courses of instruction covering two and three years, and confers the degrees of Doctor of Pharmacy (Pharm. D.) and Pharmaceutical Chemist (Ph. C.).

A general education equivalent to the completion of one year in a high school, as shown by certificate or examination, is required for entrance.

Open to both sexes. All courses have compulsory laboratory work connected.

The demand for graduates of this school is in excess of the supply

SCHOLARSHIPS. The Massachusetts State Pharmaceutical Association, the Eastern Drug Co., the Brewer & Co., the Robert W. Greenleaf and the Julian W. Baird Scholarships are open to students of the school.

EMPLOYMENT. On application from prospective students the Dean will be pleased to assist in securing situations in drug stores, where the students will be allowed the necessary time to attend one or more courses.

For further information and catalogue, write to

THEODORE J. BRADLEY, B. S., Ph. G., Dean

ARTIFICIAL COAL.

Dr. Bergius, of Hanover, in a paper describing his experiments on the manufacture of artificial coal, says that he heated cellulose, or peat, with water, to a temperature of 340° C. and at a pressure of over 100 atmospheres, in a specially constructed apparatus, and found that both these substances were transformed into a product physically and chemically identical to coal. At a temperature of 310° C. the process took sixty hours, and at 340° C. the transformation took place in eight hours. The speed of the reaction, says the *Chemical Trade Journal*, is doubled with every additional 10° C. of temperature. Dr. Bergius estimates on this basis that the time necessary for the formation of natural coal, at the temperature of the earth's crust, is 8,000,000 years, figures which are approximately the same as those given by geology.—Pharm. Jour. and Pharmacist.

American Pharmaceutical Association

Organized: Philadelphia, 1852.

Incorporated: Washington, D. C., 1888.

OFFICIAL ROSTER FOR 1912-1913.*

GENERAL OFFICERS.

President—WILLIAM B. DAY.....Michigan Boulevard and Twelfth Street, Chicago, Ill.
Honorary President—THOS. F. MAIN.....166 Chambers Street, New York, N. Y.
First Vice President—CHAS. M. FORD.....1236 Ogden Street, Denver, Colo.
Second Vice President—CASWELL A. MAYO.....66 West Broadway, New York, N. Y.
Third Vice President—C. HERBERT PACKARD.....7 Central Square, East Boston, Mass.
Treasurer—HENRY M. WHEPLEY.....2342 Albion Place, St. Louis, Mo.
General Secretary and Editor of the Journal—JAMES H. BEAL.....Scio, Ohio
Reporter on the Progress of Pharmacy—C. LEWIS DIEHL.....932 Cherokee Road, Louisville, Ky.
Local Secretary—JOHN O. BURGE.....Nashville, Tenn.

OFFICERS OF THE COUNCIL FOR 1912-1913.

Chairman—EUGENE G. EBERLE.....1504 Jackson Street, Dallas, Tex.
Vice Chairman—F. C. GODBOLD.....3613 Chestnut Street, New Orleans, La.
Secretary—JOSEPH W. ENGLAND.....415 North Thirty-third Street, Philadelphia, Pa.

MEMBERS OF THE COUNCIL FOR 1912-1913.

(Elected by the Association.)

J. H. BEAL, Scio, Ohio.....	Term expires 1913
J. P. REMINGTON, Philadelphia, Pa.....	Term expires 1913
H. H. RUSBY, Newark, N. J.....	Term expires 1913
E. G. EBERLE, Dallas, Tex.....	Term expires 1914
GEORGE F. PAYNE, Atlanta, Ga.....	Term expires 1914
JAMES M. GOOD, St. Louis, Mo.....	Term expires 1914
WILLIAM C. ALPERS, New York, N. Y.....	Term expires 1915
FABIUS C. GODBOLD, New Orleans, La.....	Term expires 1915
LUCIUS E. SAYRE, Lawrence, Kans.....	Term expires 1915

(Elected by Local Branches.)

LEWIS C. HOPF, Northern Ohio Branch, Cleveland, Ohio.....	Term expires 1912
E. H. LAPIERRE, New England Branch, Cambridge, Mass.....	Term expires 1912
JOHN B. THOMAS, Baltimore Branch, Baltimore.....	Term expires 1912
F. J. WULLING, Northwestern Branch, Minneapolis.....	Term expires 1912
WM. R. WHITE, Nashville, Branch, Nashville, Tenn.....	Term expires 1912
J. A. KOCH, Pittsburg Branch, Pittsburg, Pa.....	Term expires 1914
PHILIP ASHER, New Orleans Branch, New Orleans, La.....	Term expires 1914
JOHN A. MARTIN, Denver Branch, Denver, Colo.....	Term expires 1914
HENRY B. FLOYD, City of Washington Branch, Washington, D. C.....	Term expires 1914
THOMAS D. McELHENIE, New York Branch, New York, N. Y.....	Term expires 1915
ALBERT H. CLARK, Chicago Branch, Chicago, Ill.....	Term expires 1915
WILLIAM K. ILIARDT, St. Louis Branch, St. Louis, Mo.....	Term expires 1915
FRANKLIN M. APPLE, Philadelphia Branch, Philadelphia, Pa.....	Term expires 1915

(Members of the Council Ex-Officio.)

The President, Vice Presidents, General Secretary, Treasurer, Reporter on the Progress of Pharmacy, Secretary of the Council, Local Secretary, Historian, and the Chairmen of the Sections.

OFFICERS OF THE SECTIONS.

(Elected by the Several Sections.)

SECTION ON SCIENTIFIC PAPERS.

Chairman—FRANK R. ELDRED.....3323 Kenwood Avenue, Indianapolis, Ind.
First Vice Chairman—JOHN M. FRANCIS.....240 Seyburn Avenue, Detroit, Mich.
Second Vice Chairman—WILBUR L. SCOVILLE.....81 Melbourne Avenue, Detroit, Mich.
Secretary—FREEMAN P. STROUP.....145 North Tenth Street, Philadelphia, Pa.

SECTION ON PHARMACOPŒIAS AND FORMULARIES.

Chairman—L. D. HAVENHILL.....1539 Vermont Street, Lawrence, Kans.
Secretary—E. FULLERTON COOK.....115 North Tenth Street, Philadelphia, Pa.

* Report corrections to the General Secretary.

SECTION ON EDUCATION AND LEGISLATION.

Chairman—WILBER J. TEETERS.....Iowa College of Pharmacy, Iowa City, Ia.
Secretary—FRANK H. FREERICKS.....1215-1216 Mercantile Library Building, Cincinnati, Ohio
Associates—{ LOUIS EMANUEL.....Second Avenue and Grant Street, Pittsburgh, Pa.
 { ZADA M. COOPER.....124 Bloomington Street, Iowa City, Ia.
 { HUGH CRAIG.....100 William Street, New York, N. Y.

SECTION ON PRACTICAL PHARMACY AND DISPENSING.

Chairman—J. LEON LASCOFFLexington and Eighty-third Street, New York, N. Y.
Secretary—FERDINAND W. NITARDY.....1118 Cherokee Street, Denver, Colo.
Associate—CORNELIUS OSSEWARD.....Cobb Building, Fourth and University Streets, Seattle, Wash.

SECTION ON COMMERCIAL INTERESTS.

Chairman—AUTUMN V. PEASE.....408 Fourth Street, Fairbury, Neb.
Secretary—WILLIAM R. WHITE.....311 Grace Avenue, Nashville, Tenn.
Associates—{ HERMAN C. SHUPTRINE.....229 Congress Street, West, Savannah, Ga.
 { G. C. KENDALL.....4 South Twenty-second Avenue, Meridian, Miss.
 { W. A. MCCUTCHEN.....Luther, Okla.

SECTION ON HISTORICAL INTERESTS.

Chairman—JOHN G. GODDING.....278 Dartmouth Street, Boston, Mass.
Secretary—FREDERICK T. GORDON.....2113 West Norris Street, Philadelphia, Pa.
Historian—CASWELL A. MAYO.....62-68 West Broadway, New York, N. Y.

OFFICERS OF THE LOCAL BRANCHES, 1912-1913.

(The General Secretary should have prompt notice of corrections and changes.)

CHICAGO BRANCH.

President—J. H. WELLS.
First Vice President—S. K. SASS.
Second Vice President—WILLIAM GRAY.
Third Vice President—MRS. M. M. GRAY.
Secretary-Treasurer—W. B. DAY.
Committee Chairmen.
Practical Pharmacy—J. A. BECKER.
Medical Relations—BERNARD FANTUS.
Publicity—OTTO BRUDER.
Legislation—J. P. CROWLEY.
Council Representative—A. H. CLARK.

NORTHERN OHIO BRANCH.

President—L. C. HOPP.
Secretary-Treasurer—T. BERNARD TANNER.
Vice President—W. T. HANKEY.

PHILADELPHIA BRANCH.

President—F. E. STEWART.
First Vice President—SAMUEL C. HENRY.
Second Vice President—E. FULLERTON COOK.
Treasurer—WILLIAM MCINTYRE.
Secretary—AMEROSE HUNSBERGER.
Council Representative—FRANKLIN M. APPLE.
Committee Chairmen.
Practical Pharmacy—PAUL L. MCCONOMY.
Professional Relations—FRANK E. MORGAN.
Membership—OTTO KRAUS.

PHILADELPHIA BRANCH.

(Scientific Section.)

President—C. H. KIMBERLY.
Secretary—F. P. STROUP.

PITTSBURG BRANCH.

President—ANDREW CAMPBELL.
First Vice President—LOUIS SAALBACH.
Second Vice President—PETER G. WALTER.
Third Vice President—LEONARD K. DARRAKER.
Secretary—B. E. PRITCHARD.
Treasurer—P. HENRY UTECH.
Committee Chairmen.
Membership—CHARLES E. WILLETTS.
Practice—FREDERICK J. BLUMENSCHNEIN.
Medical Relations—GEORGE W. KUTSCHER.
Education and Legislation—JAMES H. BEAL.

CITY OF WASHINGTON BRANCH.

President—LEWIS FLEMER. *Second Vice President*—HENRY E. KALUSOWSKI.
First Vice President—LYMAN F. KEBLER. *Secretary and Council Member*—HENRY B. FLOYD.
Treasurer—WYMOND H. BRADBURY.
Committee Chairmen.
Membership—HERBERT C. EASTERDAY. *Medical Relations*—FRANK C. HENRY.
Legislation—WILLARD S. RICHARDSON. *Scientific Communications*—RODNEY H. TRUE.
Publicity—MARTIN I. WILBERT.

NEW ENGLAND BRANCH.

President—CHARLES F. NIXON. *Vice President*—ALBERT W. MESERVE.
Secretary-Treasurer—R. ALBRO NEWTON.
Committee Chairmen.
Professional Relations—FRANK F. ERNST. *Membership*—WILLIAM H. GLOVER.

BALTIMORE BRANCH.

President—E. F. KELLY. *Vice President*—W. M. FOUCH.
Secretary-Treasurer—E. W. HOBSON.
Committee Chairmen.
Membership—H. A. B. DUNNING. *Science and Practice*—H. P. HYNSON.
Professional Relations—J. F. HANCOCK. *Education and Legislation*—J. E. HANCOCK.

DENVER BRANCH.

President—JOHN BEST. *Second Vice President*—C. H. SKINNER. . .
First Vice President—L. B. BRIDGEMAN. *Secretary-Treasurer*—F. W. NITARDY.

NEW YORK BRANCH.

President—GEORGE C. DIEKMAN. *Vice President*—C. D. BIGELOW.
Treasurer—JOSEPH WEINSTEIN. *Secretary*—HUGH CRAIG.
Committee Chairmen.
Progress of Pharmacy—OTTO RAUBENHEIMER. *Professional Relations*—J. LEON LASCOFF.
Education and Legislation—THOS. P. COOK. *Membership*—CASWELL A. MAYO.

NASHVILLE BRANCH.

President—J. O. BURGE. *Second Vice President*—D. J. KUHN.
First Vice President—E. A. RUDDIMAN. *Treasurer*—C. C. YOUNG.
Secretary—WILLIAM R. WHITE.
Committee Chairmen.
Membership—C. C. YOUNG. *Legislation*—IRA B. CLARK.
Trade Interests—M. E. HUTTON. *National Formulary*—R. L. EVES.

NORTHWESTERN BRANCH.

President—STEWART GAMBIE. *Secretary-Treasurer*—EDWIN L. NEWCOMB.

ST. LOUIS BRANCH.

President—WM. K. ILHARDT. *Second Vice President*—ARTHUR C. SCHUELTE, JR.
First Vice President—J. A. WILKERSON. *Secretary*—WM. H. LAMONT.
Treasurer—CARL T. BUEHLER.
Advisory Board—N. EMERY WILLIAMS, DELTA E. COMBS, LOUIS LIEBERSTEIN.

GENERAL COMMITTEES.

(Appointed by the President.)

COMMITTEE ON U. S. P.

H. A. B. DUNNING.....	Term expires 1912	I. F. KEBLER.....	Term expires 1918
CHARLES E. CASPARI.....	Term expires 1913	HARVEY A. SELL.....	Term expires 1919
A. B. LYONS.....	Term expires 1914	E. FULLERTON COOK.....	Term expires 1920
WILLIAM MITTELBACH.....	Term expires 1915	E. H. LAPIERRE.....	Term expires 1921
REID HUNT.....	Term expires 1916	L. D. HAVENHILL, Chm.....	Term expires 1922

BOARD OF CANVASSERS.

H. V. ARNY.....	New York	GEORGE C. DIEKMANN.....	New York
OTTO RAUBENHEIMER.....	New York		

COMMITTEE ON UNOFFICIAL STANDARDS.

(Elected by the Council.)

OTTO RAUBENHEIMER, 1341 Fulton Street, Brooklyn.....	Term expires 1913
GEORGE D. ROSENGARTEN, P. O. Box 1625, Philadelphia.....	Term expires 1913
CHARLES E. VANDERKLEED, 200 First Avenue, Collingswood, N. J.....	Term expires 1913
M. I. WILBERT, 728 Twentieth Street, N. W., Washington, D. C.....	Term expires 1913
GEORGE M. BERINGER (<i>Chairman</i>), 501 Federal Street, Camden, N. J.....	Term expires 1914
H. H. RUSBY, 776 DeGraw Avenue, Newark, N. J.....	Term expires 1914
F. R. ELDRED, 3323 Kenwood Avenue, Indianapolis.....	Term expires 1914
JOHN M. FRANCIS, 240 Seyburn Avenue, Detroit.....	Term expires 1914
J. A. KOCH, Bluff and Pride Streets, Pittsburgh.....	Term expires 1915
THOMAS P. COOK, 114 William Street, New York.....	Term expires 1915
L. D. HAVENHILL, Lawrence, Kan.....	Term expires 1915
E. L. NEWCOMB, 527 Fifth Avenue, S. E., Minneapolis.....	Term expires 1915
HENRY KRAEMER, 424 South Fourth Street, Philadelphia.....	Term expires 1916
EUSTACE H. GANE, 91 Fulton Street, New York.....	Term expires 1916
B. L. MURRAY, Care Merck & Co., New York.....	Term expires 1916
W. A. PUCKNER, 535 Dearborn Avenue, Chicago.....	Term expires 1916

AUDITING COMMITTEE.

OTTO F. CLAUS, <i>Chairman</i> , St. Louis.	F. W. SULTAN, St. Louis.
SOLOMON BOEHM, St. Louis.	

COMMITTEE ON INVESTED AND TRUST FUNDS.

JAMES H. BEAL, <i>Chairman</i> .	THOS. P. COOK.
E. G. EBERLE.	H. M. WHELPLEY, <i>Ex-officio</i> .

COMMITTEE ON FINANCE.

J. A. KOCH, <i>Chairman</i> .	OTTO F. CLAUS.
	E. H. LAPIERRE.

COMMITTEE ON PUBLICATION.

J. W. ENGLAND, <i>Chairman</i> ; G. M. BERINGER, F. W. MEISSNER, JR., F. J. WULLING, J. L. LEMBERGER;	
The Editor, Associate Editors and Treasurer, <i>Ex-officio</i> .	

COMMITTEE ON CENTENNIAL FUND.

JOHN G. GODDING, <i>Chairman</i> .	JAMES H. BEAL.
	J. A. KOCH.

REPORT ON THE PROGRESS OF PHARMACY.

Reporter—C. LEWIS DIEHL.....932 Cherokee Road, Louisville, Ky.

Collaborators—

HARRY V. ARNY.....	115 West Sixty-eighth Street, New York, N. Y.
LINWOOD A. BROWN.....	Kentucky Experimental Station, Lexington, Ky.
FREDERICK T. GORDON.....	2113 West Norris Street, Philadelphia, Pa.
ERNEST C. MARSHALL.....	9 Vancouver Street, Fenway, Boston, Mass.
OTTO RAUBENHEIMER.....	1341 Fulton Street, Chicago, Ill.
MARTIN I. WILBERT.....	Twenty-fifth and E Streets, N. W., Washington, D. C.

COMMITTEE ON TRANSPORTATION.

W. BODEMANN, <i>Chairman</i> .	CHAS. B. WHILDEN.
W. C. ALPERS.	F. C. GODDOLD.
H. M. WHELPLEY.	W. S. ELKINS, JR.
CHAS. G. MERRELL.	C. M. FORD.
J. O. BURGE.	C. HERBERT PACKARD.
CHAS. CASPARI, JR.	L. C. HOPP.

THE JOURNAL OF THE COMMITTEE ON THE NATIONAL FORMULARY.

(Elected by the Council.)

C. LEWIS DIEHL, <i>Chairman</i>	Louisville, Ky.	H. A. B. DUNNING.....	Baltimore, Md.
CLYDE M. SNOW.....	Chicago, Ill.	SAMUEL L. HILTON.....	Washington, D. C.
A. B. STEVENS.....	Ann Arbor, Mich.	CHAS. H. LA WALL.....	Philadelphia, Pa.
OTTO RAUBENHEIMER.....	Brooklyn, N. Y.	GEO. M. BERINGER.....	Camden, N. J.
LEONARD A. SELTZER.....	Detroit, Mich.	M. L. WILBERT.....	Washington, D. C.
HARRY V. ARNY.....	New York	W. L. SCOVILLE.....	Detroit, Mich.
E. FULLERTON COOK.....	Philadelphia, Pa.	WILLIAM A. HALL.....	Detroit, Mich.
ADAM WIRTH.....	New Orleans, La.		

PHARMACEUTICAL SYLLABUS.

(Appointed by the President.)

E. G. EBERLE, 1804 Jackson Street, Dallas, Tex.....	Term expires 1913
HARRY B. MASON, P. O. Box 484, Detroit.....	Term expires 1914
GEORGE M. BERINGER, 501 Federal Street, Camden, N. J.....	Term expires 1915
WILLIAM B. DAY, Michigan Boulevard and Twelfth Street, Chicago.....	Term expires 1916
WILLIS B. GREGORY, 530 Main Street, Buffalo.....	Term expires 1917
HENRY L. TAYLOR, 2 Woodlawn Avenue, Albany, N. Y.....	Term expires 1918
CHARLES CASPARI, JR., 6 East Franklin Street, Baltimore.....	Term expires 1919

TIME AND PLACE OF NEXT MEETING.

L. A. SELTZER, <i>Chairman</i>	Detroit	F. M. APPLE.....	Philadelphia
W. H. BROWN.....	Chicago	G. B. KAUFMAN.....	Columbus, Ohio
THOS. F. MAIN.....	New York, N. Y.		

NATIONAL LEGISLATION.

JOHN C. WALLACE, <i>Chairman</i>	New Castle, Pa.	F. A. HUBBARD.....	Boston, Mass.
W. S. RICHARDSON.....	Washington	S. L. HILTON.....	Washington, D. C.
J. H. BEAL.....	Scio, Ohio		

STATUS OF PHARMACISTS IN THE GOVERNMENT SERVICE.

W. S. RICHARDSON, <i>Chairman</i>	Washington, D. C.	S. L. HILTON.....	Washington, D. C.
W. C. SHUPTRINE.....	Savannah, Ga.	W. R. WHITE.....	Nashville, Tenn.
GEO. F. PAYNE.....	Atlanta, Ga.		

WILLIAM PROCTER MEMORIAL FUND.

J. F. HANCOCK, <i>Chairman</i>	Baltimore	F. C. RYAN.....	Detroit
CHARLES CASPARI, JR.....	Baltimore	THOMAS F. MAIN.....	New York
A. R. L. DOHME.....	Baltimore	PARKER C. COOK.....	Baltimore
B. F. FAIRCHILD.....	New York	J. K. LILLY.....	Indianapolis
CASWELL A. MAYO.....	New York	H. S. WELLCOME.....	London, Eng.
E. G. EBERLE.....	Dallas	GEORGE MERRELL.....	Cincinnati
J. L. LEUGFELD.....	San Francisco	JOSE P. ALACAN.....	Havana, Cuba
C. M. FORD.....	Denver	E. L. PATCH.....	Boston
CLEMENT B. LOWE.....	Philadelphia	LEWIS C. HOPP.....	Cleveland
HENRY KRAEMER.....	Philadelphia	JAS. E. HANCOCK.....	Baltimore

ON REVISION OF THE CONSTITUTION AND BY-LAWS.

J. W. ENGLAND, <i>Chairman</i>	Philadelphia	J. H. BEAL.....	Scio
H. M. WHELPLEY.....	St. Louis	G. M. BERINGER.....	Camden
J. C. WALLACE.....	New Castle, Pa.		

PATENTS AND TRADE MARKS.

F. E. STEWART, <i>Chairman</i>	Philadelphia	W. BODEMANN.....	Chicago, Ill.
S. L. HILTON.....	Washington, D. C.	FRANK M. FREERICKS.....	Cincinnati, Ohio
J. W. ENGLAND.....	Philadelphia, Pa.		

INTERNATIONAL COMMITTEE ON PHARMACEUTICAL NOMENCLATURE.

CASWELL A. MAYO, <i>Chairman</i>	New York	H. M. WHEPLEY.....	St. Louis
JOSEPH P. REMINGTON.....	Philadelphia	G. M. BERINGER.....	Camden, N. J.
E. O. ENGSTROM.....		Pittsfield	

ON DRUG REFORM.

L. E. SAYRE, <i>Chairman</i>	Lawrence Kan.	ALBERT SCHNEIDER.....	San Francisco
E. N. GATHERCOAL.....		Chicago	

ON WEIGHTS AND MEASURES.

GEORGE C. DIEKMAN, <i>Chairman</i>	New York	C. W. JOHNSON.....	Seattle
H. V. ARNY.....	New York	PHILIP ASHER.....	New Orleans
G. H. MEEKER.....		Philadelphia	

DELEGATES TO A. M. A. SECTION ON PHARMACOLOGY.

J. P. REMINGTON, <i>Chairman</i>	Philadelphia	L. F. KEBLER.....	Washington, D. C.
H. M. WHEPLEY.....	St. Louis	G. M. BERINGER.....	Camden
J. H. BEAL.....	Scio, Ohio	OTTO RAUBENHEIMER.....	Brooklyn
H. H. RUSBY.....	Newark, N. J.	THEO. J. BRADLEY.....	Boston
BERNARD FANTUS.....	Chicago	F. J. WULLING.....	Minneapolis

DELEGATES TO N. A. R. D.

H. C. SHUPTRINE, <i>Chairman</i> .		W. BODEMANN.	
SIMON N. JONES.		W. C. ANDERSON.	
		FRANK H. FREERICKS.	

PHYSIOLOGICAL TESTING.

E. M. HOUGHTON, <i>Chairman</i>	130 Longfellow Avenue, Detroit
H. C. WOOD, JR.....	434 South Forty-fourth St., Philadelphia
CHARLES R. ECKLER.....	432 East St. Clair Street, Philadelphia
W. A. PEARSON.....	35 Poplar Street, Philadelphia
WILLIAM WORTH HALE.....	1495 Newton Street, N. W., Washington, D. C.

COMMITTEE ON EDITING RULES.

(Appointed by the President.)

CASWELL A. MAYO, <i>Chairman</i>	New York	HARRY B. MASON.....	Detroit
EZRA J. KENNEDY.....	New York	HUGO KANTROWITZ.....	New York
J. H. BEAL.....		Scio, Ohio	

COMMITTEE ON INTERNATIONAL CONGRESS OF PHARMACY.

(Appointed by the President.)

JOS. P. REMINGTON, <i>Chairman</i>	Philadelphia	ALBERT SCHNEIDER.....	San Francisco
EUGENE G. EBERLE.....		Dallas, Tex.	

COMMITTEE ON ORGANIZATION OF LOCAL BRANCHES.

(Appointed by the President.)

THEO. D. WETTERSTROEM, <i>Chmn.</i>	Cincinnati	D. V. WHITNEY.....	Kansas City, Mo.
GEO. B. KAUFFMAN.....	Columbus, O.	F. R. FLORED.....	Indianapolis
CHARLES W. JOHNSON.....		Seattle	

COMMITTEE ON DRUG MARKET.

(Appointed by the Chairman of the Scientific Section.)

EDGAR L. PATCH, <i>Chairman</i> .		L. F. KEBLER.	
W. L. SCOVILLE.		H. H. RUSBY.	

GENERAL MEMBERSHIP COMMITTEE.

A. H. CLARK, *Chairman*, 74 East Twelfth Street, Chicago.

- Ala.—W. E. BINGHAM, Tuscaloosa.
JAMES C. VANANTWERP, Mobile.
- Ariz.—HARRY BRISLEY, Prescott.
R. P. H. KOZIENE, Phoenix.
- Ark.—W. L. DEWOODY, Pine Bluff.
F. SCHACHLEITER, Hot Springs.
MISS M. A. FEIN, Little Rock.
- Calif.—ALBERT SCHNEIDER, San Francisco.
GEORGE H. P. LICHTHARDT, Sacramento.
FRID I. LACKENBACH, San Francisco.
R. A. LEET, Oakland.
JOSEPH LENGFELD, San Francisco.
- Colo.—S. L. BRISLER, Denver.
FRID W. NIARDY, Denver.
E. L. SCHOLTZ, Denver.
- Conn.—CHARLES A. RAPELAY, Hartford.
JOHN B. EBBS, Waterbury.
- D. C.—W. S. RICHARDSON, Washington.
M. I. WILBERT, Washington.
- Del.—H. K. WATSON, Wilmington.
E. A. TRUITT, Middleton.
- Fla.—J. M. DIXON, Jacksonville.
ERNEST BERGER, Tampa.
- Ga.—WILLIAM S. ELKINS, Atlanta.
MAX MORRIS, Macon.
- Ida.—CLARENCE O. BALLOU, Boise.
H. M. SKEELS, Twin Falls.
- Ill.—C. H. AVERY, Chicago.
GEORGE W. SOHRBECK, Moline.
WILHELM BODEMANN, Chicago.
W. B. DAY, Chicago.
- Ind.—FRANK H. CARTER, Indianapolis.
W. H. RUDDER, Salem.
F. W. MEISSNER, JR., La Porte.
C. B. JORDAN, Lafayette.
A. W. LINTON, Valparaiso.
- Iowa.—WILBER J. TEETERS, Iowa City.
G. SCHIERLING, Sioux City.
- Kan.—L. D. HAVENHILL, Lawrence.
MATTHIAS NOLL, Atchison.
M. A. FREIDENBURG, Winfield.
- Ky.—JOHN W. GAYLE, Frankfort.
C. LEWIS DIEHL, Louisville.
- La.—FABRUS C. GODFOLD, New Orleans.
M. T. BRESLIN, New Orleans.
PHILIP ASHER, New Orleans.
- Me.—ALFRED P. COOK, Portland.
M. L. PORTER, Danforth.
C. H. DAVIS, Bangor.
- Md.—H. A. B. DUNNING, Baltimore.
EVANDER F. KELLY, Baltimore.
H. L. MEREDITH, Hagerstown.
- Mass.—C. HERBERT PACKARD, Boston.
E. H. LAPIERRE, Cambridge.
JAMES F. GUERIN, Worcester.
WILLIAM H. GLOVER, Lawrence.
- Mich.—WILLIAM A. HALL, Detroit.
LEONARD A. SELTZER, Detroit.
J. O. SCHLOTTERBECK, Ann Arbor.
W. C. KIRCHGESSNER, Grand Rapids.
- Va.—CHARLES B. FLEET, Lynchburg.
T. A. MILLER, Richmond.
- Wash.—C. W. JOHNSON, Seattle.
CORNELIUS OSSEWARD, Seattle.
A. F. MAXWELL, Spokane.
- W. Va.—JOHN COLEMAN, Wheeling.
GEORGE O. YOUNG, Buckhannon.
- Wis.—EDWARD WILLIAMS, Madison.
EDWARD HERBARD, La Crosse.
HENRY Z. RUENZEL, Milwaukee.
- Minn.—F. J. WUHLING, Minneapolis.
ALBERT D. THOMPSON, Minneapolis.
W. A. FROST, St. Paul.
CHARLES T. HULLER, St. Paul.
- Miss.—H. M. FRASER, University.
C. C. KENDALL, Meridian.
- Mo.—J. W. MACKELDEN, St. Louis.
WM. H. LAMONT, St. Louis.
D. V. WHITNEY, Kansas City.
W. MITTELBACH, Boonville.
CHARLES E. ZINN, Kansas City.
- Mont.—HOWARD ROCKEFELLER, Butte.
LEL WAPREN, Billings.
- Neb.—CHARLES R. SHERMAN, Omaha.
AUTUMN V. PEASE, Fairbury.
- Nev.—JOSEPH M. TABER, Elko.
- N. H.—WILLIAM D. GRACE, Portsmouth.
HERBERT E. RICE, Nashua.
- N. J.—GEORGE M. BERINGER, Camden.
CHARLES HOLZHAUER, Newark.
H. A. JORDAN, Bridgeton.
- N. Y.—GEORGE C. DEIKMAN, New York City.
JOSEPH WEINSTEIN, New York City.
CASWELL A. MAYO, New York City.
W. C. ALPERS, New York City.
OTTO RAUBENHEIMER, Brooklyn.
ALBERT M. ROEHRIG, Buffalo.
WARREN L. BRADT, Albany.
- N. C.—E. V. ZOELLER, Tarboro.
E. V. HOWELL, Chapel Hill.
- N. D.—H. L. HAUSSEMAN, Grafton.
W. S. PARKER, Lisbon.
- New Mexico—B. C. RUPPE, Albuquerque.
- Ohio—LEWIS C. HOPP, Cleveland.
J. H. BEAL, Scio.
THEO. D. WETTERSTROM, Cincinnati.
GEORGE B. KAUFFMAN, Columbus.
FRANK H. FREERICKS, Cincinnati.
- Okl.—FORESS B. LILLIE, Guthrie.
H. D. KNISELEY, Checotah.
- Ore.—JOHN A. LAUE, Portland.
G. C. BLAKELEY, The Dalles.
- Pa.—JOSEPH W. ENGLAND, Philadelphia.
W. L. CLIFFE, Philadelphia.
W. MCINTYKE, Philadelphia.
E. FULLERTON COOK, Philadelphia.
JULIUS A. KOCH, Pittsburg.
- R. I.—W. O. BLANDING, Providence.
JAMES O'HARE, Providence.
- S. C.—G. W. EVANS, Anderson.
- S. D.—IRWIN A. KEITH, Lake Preston.
E. C. BENT, Dell Rapids.
- Tenn.—T. J. SHANNON, Sharon.
WILLIAM R. WHITE, Nashville.
IRA B. CLARK, Nashville.
- Tex.—JACOB SCHRODT, Dallas.
ROBERT H. WALKER, Gonzales.
R. H. NEEDHAM, Fort Worth.
- Utah—F. A. DRUEHL, Salt Lake City.
OTTO R. PETERS, Salt Lake City.
- Vt.—E. W. GILMAN, Marshfield.
W. E. TERRILL, Montpelier.
W. H. ZOTTMAN, Burlington.
- Province of New Brunswick—
M. V. PADDOCK, St. John.
- Province of Nova Scotia—
F. C. STIMSON, Halifax.
- Province of Ontario—
C. F. HEEBNER, Toronto.
- Province of Quebec—
J. E. MORRISON, Montreal.
- Cuba—JOSE GUILLERMO DIAZ, Havana.
JOSE P. ALACAN, Havana.
- Alaska—GUY L. SMITH, Douglas.
- Philippine Islands—
ARTHUR NEVILLE, Jolo.
- Porto Rico—FRID C. BAUM, San Juan.
- Hawaiian Islands—
SAMUEL LOUIS RUMSEY, Honolulu.
- Province of Manitoba—
H. E. J. BLETCHER, Winnipeg.

SUB-COMMITTEES OF THE GENERAL MEMBERSHIP COMMITTEE.

Food and Drug Chemists.

LINWOOD A. BROWN.....Lexington, Ky. J. H. BEAL.....Scio, O.
 THEO. D. WILFERTSTROM.....Church Hill

Faculty Members.

H. M. WHIFPLEY.....St. Louis, Mo. THEO. J. FRABLEY.....Boston, Mass.
 C. A. DYE.....Columbus, Ohio CHAS. E. MOFFITT.....Bozeman, Mont.

Board Members.

R. H. WALKER.....Gonzales, Texas E. O. ENGSTROM.....Pittsfield, Mass.
 F. C. DODDS.....Springfield, Ill.

Drug Clerks.

A. F. SALA.....Winchester, Ind. D. N. ROBIN.....Pittsburgh, Pa.

Women Members.

MISS ANNA G. BAGLEY.....Columbus, Ohio MRS. M. M. GRAY.....Chicago
 MISS ZADA M. COOPER.....Iowa City, Ia.

Wholesale Druggists and Manufacturers.

JAMES W. MORRISON.....Chicago ALBERT PLAUT.....New York
 WILLIAM J. SCHIEFFELIN.....New York

DIRECTORY OF STATE ASSOCIATIONS.*

ALABAMA. Meets at Talladega Springs, 1913

President—C. T. RUFF.....Montgomery Secretary—W. E. BINGHAM.....Tuscaloosa

ARIZONA. Meets at Tucson, November 4, 1912

President—HARRY BRISLEY.....Prescott Secretary—T. E. THORPE.....Phoenix

ARKANSAS. Meets at Hope, May, 1913

President—J. J. WARD.....Hope Secretary—MISS MARY A. FEIN.....Little Rock

CALIFORNIA. Meets at San Jose, 1913

President—E. A. BAER.....San Francisco Secretary—K. B. BOWERMAN.....San Francisco

COLORADO. Meets at Glenwood Springs, 1913

President—E. G. FINE.....Boulder Secretary—CHAS. J. CLAYTON.....Denver

CONNECTICUT. 1913

President—S. M. ALLER.....South Norwalk Secretary—P. J. GARVAN.....Bethel

DELAWARE. 1913

President—R. M. KAUFFMAN.....Seaford Secretary—WALTER L. MORGAN.....Wilmington

DISTRICT OF COLUMBIA

President—F. T. STONE.....Washington Secretary—C. J. FUHRMANN.....Washington

FLORIDA. Meets at Tampa, 1913

President—MACON THORNTON.....Ormond Secretary—J. H. HAUGHTON.....Palatka

GEORGIA. Meets at Columbus, 1913

President—JACOB WINCHESTER RIDOUT.....Macon Secretary—T. A. CHEATHAM.....Atlanta

IDAHO. Meets at Boise, May 7-9, 1913

President—CHARLES T. JOY.....Boise Secretary—DONALD S. WHITEHEAD.....Boise

ILLINOIS. Meets at Quincy, June, 1913

President—JAMES H. WELLS.....Chicago Secretary—W. B. DAY.....Chicago

INDIANA. Meets at Lake Wawasee, 1913

President—C. A. HAUPT.....Terre Haute Secretary—MAURICE P. SCHWARTZ.....Indianapolis

IOWA. Meets at Waterloo, 1913

President—FRANK SHANE.....Eldon, Ia. Secretary—AL. FALKENHAINER.....Algona

KANSAS. Meets at Lawrence, May 27-29, 1913

President—CLARENCE C. REED.....Salina Secretary—D. VON RIESEN.....Marysville

KENTUCKY. 1913

President—CLYDE GRADY.....Smith Mills Secretary—J. W. GAYLE.....Frankfort

LOUISIANA. 1913

President—W. E. ALLEN.....Monroe Secretary—GEORGE W. McDUFFE.....New Orleans

* Notice of corrections or changes should be sent to J. H. Beal, Scio, Ohio. The JOURNAL is indebted to the Druggists' Circular for a portion of the data found in this table.

MAINE. 1913

President—E. W. MURPHY.....Portland *Secretary*—M. L. PORTER, M. D.....Danforth

MARYLAND. Meets at Blue Mountain House, September 3-6, 1913

President—JAMES E. HANCOCK.....Baltimore *Secretary*—E. FRANK KELLY.....Baltimore

MASSACHUSETTS. 1913

President—WILLIAM S. BRIRY.....Melrose *Secretary*—J. F. GUERIN.....Worcester

MICHIGAN. Meets at Muskegon, August 6-8, 1913

President—E. W. AUSTIN.....Midland *Secretary*—M. H. GOODALE.....Battle Creek

MINNESOTA. Meets at St. Paul, 1913

President—TRUMAN GRIFFIN.....Minneapolis *Secretary*—F. A. KLENERT.....Minneapolis

MISSISSIPPI. Meets at Gulfport, 1913

President—T. A. HOLCOMBE.....Greenville *Secretary*—H. M. FASER.....University

MISSOURI. 1913

President—HENRY O. A. HUEGEL.....St. Louis *Secretary*—H. M. WHELPLEY.....St. Louis

MONTANA. 1913

President—C. F. CHAPPLE.....Billings *Secretary*—W. R. MONTGOMERY.....Butte

NEBRASKA. 1913

President—H. L. HARPER.....Beatrice *Secretary*—J. G. MCBRIDE.....University Place

NEVADA. No Association**NEW HAMPSHIRE. Meets at New Castle, June 24-26, 1913**

President—A. J. PRECOURT.....Manchester *Secretary*—C. G. DUNNINGTON.....Manchester

NEW JERSEY. Meets at Princeton, June 25-26, 1913

President—DAVID STRAUSS.....Newark *Secretary*—FRANK C. STUTZLEN.....Elizabeth

NEW MEXICO. Meets at New Castle, 1913

President—R. H. DANIEL.....Roswell *Secretary*—MRS. M. L. POWELL.....Albuquerque

NEW YORK. 1913

President—L. J. SCHLESINGER.....Yonkers *Secretary*—EDWARD S. DAWSON.....Syracuse

NORTH CAROLINA. 1913

President—J. G. M. CORDON.....Clayton *Secretary*—J. G. BEARD.....Chapel Hill

NORTH DAKOTA. Meets at Mandan, August, 1913

President—A. S. SIGURDSON.....Valley City *Secretary*—W. S. PARKER.....Lisbon

OHIO. Meets at Columbus, June 17, 1913

President—H. F. VORTKAMP.....Lima *Secretary*—THEO. D. WETTERSTROEM.....Cincinnati

OKLAHOMA. Meets at Lawton, 1913

President—C. A. DOW.....Pondereek *Secretary*—A. W. WOODMANCY.....Oklahoma City

OREGON. 1913

President—H. J. MARTIN.....Portland *Secretary*—A. W. ALLEN.....Portland

PENNSYLVANIA. Meets at Forest Park, June 24-26, 1913

President—LOUIS SAALBACH.....Pittsburgh *Secretary*—EDGAR F. HEFFNER.....Lock Haven

RHODE ISLAND. Meets at Providence Quarterly

President—E. T. COLTON.....Providence *Secretary*—CLARENCE BOWMER.....Providence

SOUTH CAROLINA. Meets at Glenn Springs, 1913

President—O. F. HART.....Columbia *Secretary*—F. M. SMITH.....Charleston

TENNESSEE. Meets at Memphis, July, 1913

President—E. C. FINCH.....Waverly *Secretary*—T. J. SHANNON.....Sharon

TEXAS. Meets at Galveston, June 17, 1913

President—H. C. JACKSON.....Austin *Secretary*—E. G. EBERLE.....Dallas

UTAH. 1913

President—CHARLES VANDYKE.....Salt Lake City *Secretary*—T. L. HALLIDAY.....Salt Lake City

VERMONT. 1913

President—COLLINS BLAKELY.....Montpelier *Secretary*—W. E. TERRILL.....Montpelier

VIRGINIA. Meets at Old Point Comfort, July 8-11, 1913

President—C. D. FOX.....Roanoke *Secretary*—E. L. BRANDIS.....Richmond

WASHINGTON. 1913

President—WILL A. CLIZER.....Spokane *Secretary*—ALBERT H. DEWEY.....Seattle

WEST VIRGINIA. Meets at White Sulphur Springs, 1913

President—W. C. PRICE.....Charleston *Secretary*—C. A. NEPTUNE.....Parkersburg

WISCONSIN. 1913

President—SOLLMAN A. ECKSTEIN.....Milwaukee *Secretary*—E. B. HEIMSTREET.....Palmyra

WYOMING. No Association

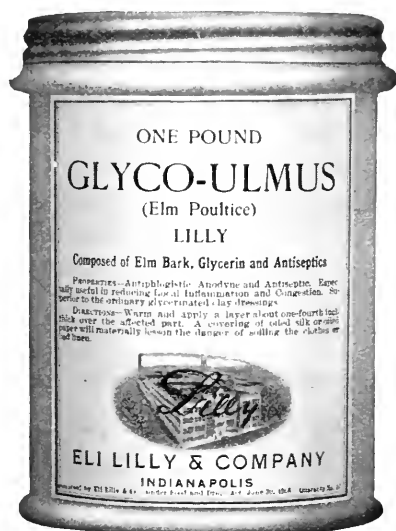
GLYCO-ULMUS, LILLY

ELM POULTICE

Composed of Elm Bark, Glycerin and Antiseptics. A New and Scientific Successor to the Old Elm Poultice

ANTIPHLOGISTIC, ANODYNE AND ANTISEPTIC

Effective in reducing local Inflammation and Congestion, and in relieving pain incident to these conditions.



Superior to the Ordinary Glycerinated Kaolin Dressings

- ¶ Contains a much larger percentage of GLYCERIN.
- ¶ Is lighter—a very important advantage when large surfaces are to be covered, as in pneumonia.
- ¶ Easier to apply.
- ¶ Easier to remove.
- ¶ Has greater absorptive capacity.

FOR TREATING—Boils, Bruises, Sprains, Felons, Burns, Scalds, Ulcers, Pneumonia, Infected Wounds. Useful whenever local inflammation is to be reduced.

Supplied in 6-ounce and 1-pound srew-cap jars

As Glyco-Ulmus will be thoroughly advertised to physicians through the medical press and by our representatives, it is suggested that you prepare for the prescriptions by including a small quantity on your next order to your jobber.

ELI LILLY & COMPANY

INDIANAPOLIS NEW YORK CHICAGO ST. LOUIS KANSAS CITY NEW ORLEANS

NEW FOURTH EDITION—REVISED AND REWRITTEN

A Text-book of Chemistry

Intended for the Use of Pharmaceutical and Medical Students

By SAMUEL P. SADTLER, Ph.D., LL.D.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry in the Philadelphia College of Pharmacy, and Chemical Editor of United States Dispensatory.

AND

VIRGIL COBLENTZ, Ph.D., F.C.S.

Member of Committee on Revision of the United States Pharmacopoeia, Professor of Chemistry and Physics in the Department of Pharmacy of Columbia University.

Octavo. 749 pages. 141 illustrations. Cloth, \$3.50. Sheep, \$4.00. Fourth Edition

The purpose of this work has been to offer a text-book on Chemistry which would combine scientific accuracy and completeness with special reference to the needs of the pharmaceutical and medical students, treating all compounds mentioned in the United States Pharmacopoeia. The authors have had many years' experience as teachers in professional schools where Chemistry is considered one of the foundation-stones upon which to build a technical education. This experience has convinced the authors that the subject must be taught in a way which, while thoroughly scientific, is yet distinctly adapted to the ultimate uses of the students.

TABLET MANUFACTURE

ITS HISTORY, PHARMACY AND PRACTICE

By JOSEPH R. WOOD, M.A., Ph.G.

12mo. 23 illustrations. \$2.00 net. Waterproof Cloth.

This volume has been written from knowledge gained by the author through many years of practical experience, to meet the needs of pharmacists who manufacture tablets either in large or small quantities. While an attempt has been made to treat the subject broadly, its nature is such as to demand the consideration of details.

Special attention has been given to causes and remedies of difficulties encountered in manufacture, such as capping, picking and sticking. Also, to the method of treatment of individual substances.

J. B. LIPPINCOTT COMPANY

Publishers

Philadelphia

Looking Ahead is a Habit

Which, once acquired, leads to a closer analysis of business conditions and the appropriation of every new idea or suggestion promising better control of one's business—greater scope for personal enterprise, and increased profits as a legitimate reward of energy, capital and experience.

The Merrell Selling Plan

Stands for *cooperation* and cooperation means *more sales* through closer affiliation with the medical profession, prescriber, and dispenser alike, that they may have convenient for use the best qualities and at competing prices.

THE RETAIL DRUGGIST should establish such relations with physicians that they may test his prices and his qualities and be convinced of his ability to serve them to advantage.

The Merrell Company

Are the original exponents of this cooperative idea; it appeals to *all* druggists, large and small alike, to the city dispenser and the retail druggist, and in localities where office dispensing, as well as prescription work, prevails.

The Merrell Plan Provides for all

The test of a business, by which, in the long run, it rises or falls, is *its ability to perform service*. Cooperation with the MERRELL PLAN, which guards your interests at every step, calls for *specification* and its *prompt recognition* by the jobbing distributor.

You cannot throw away ten per cent (10%) on your Pharmaceutical Purchases and *thrive*.

Write to the Merrell Company

If your orders are not filled. Substitution is not cooperation, and the better houses, *who stand for service* to their customers, do not sanction the practice.

The Wm. S. Merrell Chemical Company

CINCINNATI

General Agent in New York City
CHARLES N. CRITTENTON & COMPANY

General Agents in Chicago
MORRISON-PLUMMER & COMPANY

AND WHOLESALE DRUGGISTS IN ALL LEADING TRADE CENTERS

The Best Drug Store Insurance

The Colorado Insurance Commissioner lately said:

"Insurance to the average citizen is rather an uninteresting and prosaic subject."

"until a loss arises"

This we know from experience to be the exact truth. It explains why so many druggists have insufficient and sometimes unreliable insurance.

If you have insurance, *why not have enough?*

If you have insurance, *why not have the very best?*

Enough insurance means up to at least 80 per cent. of your property value. The best insurance as its very first essential, requires state supervision and ample capital.

Considering the fact that we limit our insurance to the widely scattered property of retail druggists, our Capital and Surplus of nearly \$300,000.00 makes us undoubtedly the strongest Company in this entire country with which druggists can place their insurance.

We are the Strongest

We write insurance at the very lowest premium rates consistent with safety.

Secure the Best Insurance

WRITE TO

The American Druggists Fire Ins. Co.

1215-1216 Mercantile Library Bldg.
Cincinnati, Ohio

Licensed and Resident Agents for Thirty-one States

The Journal of the American Pharmaceutical Association

Volume I

DECEMBER, 1912

No. 12

Office of Publication, 79-89 North Third St., Columbus, Ohio.

Subscription, \$3.00 per annum, within the United States. To Canada, \$3.35. To other foreign countries in Postal Union, \$3.50 per annum. Single copies, twenty-five cents.

Entered at the Postoffice at Columbus, Ohio, as Second-Class matter.

Papers and communications for insertion in the JOURNAL should be sent to the Editor, James H. Beal, Scio, Ohio. Subscriptions should be sent to the Treasurer, H. M. Whelpley, 2342 Albion Place, St. Louis, Mo.

The Association does not accept the responsibility for the opinions of contributors. Offensive personalities must be avoided.

PROTECTED MEDICINES AND THE PHARMACOPOEIA.

FROM time beyond memory, the medical profession has—in theory at least—condemned the use of medicines of secret composition, or those which were otherwise protected so that they could not be prepared by anyone possessing the requisite technical knowledge and skill.

Reflecting this traditional attitude of the profession the U. S. P. has hitherto, with few exceptions (as in the case of phenacetin) refused recognition to such protected substances, in which respect it has been rather more rigid than some other national pharmacopoeias. (See November Journal, p. 1301.)

The sentiment of the Convention of 1910 is expressed in the recommendation that "no substance or combination of substances shall be admitted if the composition or mode of manufacture thereof be kept secret, or if it be controlled by unlimited proprietary or patent rights."*

So much for theory, but in this case as in so many other things where the actions of humans are concerned, practice has not always squared with theory.

For example, it is not unusual for physicians who have subscribed to the code of ethics and who have voted for resolutions condemning patent or secret preparations to prescribe and use remedies belonging to the class they have thus condemned, and in fact it is not difficult to find in papers read before societies that

*It is worth noting, however, that this declaration is recommendatory, not mandatory, and therefore, that the General Committee of Revision might do as did the last Committee of Revision, when, in the exercise of its discretionary powers, it disregarded a recommendation of the Convention of 1900 which affected the admission of diphtheria antitoxin.

have fulminated against such preparations frequent reports of the clinical use of and professional endorsements of the supposedly interdicted articles.

Judged by the practice of the profession this old doctrine is in the class with certain of the articles of faith in some church creeds, a mere form of words which no one any longer believes in, but to which the candidate is required to express his assent before he can be admitted to the circle of the elect.

At any rate when the physician stands by the bedside of his patient he is not likely to permit an academic doctrine to stand in the way of administering the remedy which he deems most suitable to the occasion, and in thus asserting his liberty to select the therapeutic agent which his judgment approves as the best his practice squares with common sense and the dictates of humanity, even if it fractures every rule in the code of ethics. To do otherwise would not only violate the trust of the patient, who cares naught for patents or professional codes, but would come perilously near to placing the physician in a medical sect—a sect which bases its selection of remedial agents upon some other quality than their therapeutic efficiency as determined by clinical experience.

Considered from the altruistic standpoint alone, the doctrine that the physician should dedicate his discoveries freely to all mankind is entirely praiseworthy, but as proved by experience, any attempt to enforce it as a general rule of action must be futile, if for no other reason than that it requires a sacrifice on the part of the discoverer of a medicine that is required of no one else. If this be not reason enough, we have the additional very practical consideration that the American patent law is not likely ever to make any material distinction between new and useful compositions of matter intended for medicinal uses and those intended for other purposes.

We can cheerfully grant that the discoverer of a valuable therapeutic agent is entitled to the gratitude of his fellowmen if he declines to accept a monopoly of it through patent or otherwise, but by no means does it follow that if he does accept such protection he should thereby become the subject of universal reprobation.

We do not condemn the physician who accepts a fee for prescribing a remedy, nor the pharmacist who makes a charge for compounding it. Why then should we condemn the inventor or discoverer of the remedy for accepting a reward?

Owing to the activity of the synthetic and biologic chemists and the constantly increasing importance of their products, there is now a longer list of really valuable articles of materia medica outside of the official fold than at any previous period, and if the traditional policy of the non-recognition of protected products is adhered to it is easy to foresee a time when perhaps a majority of the most frequently used therapeutic agents will be outside the official list.

We are thus called upon to decide the very practical question of whether we shall continue our adherence to an ancient doctrine—no doubt entirely admirable from a humanitarian standpoint, but purely academic nevertheless—and thus have a pharmacopoeia which shall be valuable mainly as a historical document, or whether we shall bow to practical and economic necessities and make a pharmacopoeia which shall reflect actualities in the practice of medicine and pharmacy.

So far as the fortunes of the products themselves are concerned their admiss-

ion or exclusion would probably have but little effect, and such effect as it did have would probably be salutary.

The recognition of a substance would no doubt give it some little additional prestige, but it should be remembered that it would not be considered for admission until after it had attained such wide-spread professional recognition that its inclusion in the official list could add but little to its reputation.

On the other hand such official recognition, while it could not limit the proprietor's right to manufacture and sell his product, would give a certain degree of control over it and over the name by which it would be generally known in pharmacy and medicine after the patentee's rights had expired.

Without official recognition the manufacturer is a law unto himself, and may fix or change the standard of purity and strength of his product to suit himself. But the Pharmacopœia can declare the degree of purity and concentration, and the physical appearance which the Committee of Revision regards as appropriate, as well of a patented as of an unpatented product, and can also designate the names and synonyms under which it may be prescribed, and thus exert a very considerable control for good over such products without affecting the patentee's legal monopoly in the slightest degree.

It is true that the proprietor might refuse to market a product of the quality described in the Pharmacopœia, but if the standards were reasonable, as they would be, it is not at all likely that he would risk the professional opposition and loss of prestige which such a course would certainly insure.

In the light of these things would it not be wiser to make a frank recognition of the right to the protection of therapeutic discoveries—since we cannot prevent it in any event—and concentrate our attention upon the correction of that anomalous feature of our patent laws that permits a foreigner to obtain greater privileges in this country than his own country would grant him—a generosity which he usually rewards by charging the citizens of the United States from two to eight times as much for his wares as the citizens of all the rest of the world can buy them for?

J. H. BEAL.

Section on Scientific Papers

Papers Presented at the Sixtieth Annual Convention

OUTLINE OF MICRO-ANALYTICAL METHODS FOR FOOD AND DRUGS LABORATORIES.*

ALBERT SCHNEIDER, PHARMACOGNOSIST, BUREAU OF CHEMISTRY, U. S. DEPARTMENT OF AGRICULTURE.

The value of the compound microscope as a ready means for determining the identity, quality and purity of foods and drugs is, thus far, underestimated. It is true that the work of the micro-analyst as an adjunct to the work of the chemist receives certain recognition. It is however also true that the micro-analysts form a very decided minority, as there are today perhaps not more than a dozen actively employed micro-analysts in the United States. These have thus far had no meetings at which methods might be discussed and formulated, neither have they organized for such purposes.

The old-time microscopical societies have practically passed out of existence. These societies performed an excellent service in developing methods of technique, and did much toward developing and perfecting the mechanism of the compound microscope, but the work along the lines of biological study among the members did not keep pace with the purely mechanical technique, and their efforts became more and more amateurish, in the comparative sense, and finally the interest in the "Marvels revealed through the microscope" passed, and with it the society. Those microscopists having knowledge of biology, entered the field as specialists in bacteriology, pathology, botany and anatomy, limiting themselves to a comparatively narrow field of work. The micro-analyst, in the broader sense, is a very recent product.

Without further preliminaries, I shall briefly outline what suggests itself as a better adjustment of the work done by analytical chemists, micro-analysts and bacteriologists.

The analytical methods, as they apply to the critical examination of foods and drugs, as to purity and quality, are chemical, microscopical and bacteriological. The substances to be analyzed may be grouped as follows:

1. Vegetable drugs, crude and powdered, pharmacopoeial and other medicinal compound powders.
2. Spices and condiments, whole, ground and powdered, prepared spices and condiments.
3. Coffee, tea, cocoa, chocolate, confections, candies.
4. Tobacco and preparations made from tobacco, as snuff, smoking tobacco, cigars, etc.
5. Chemicals, minerals, solutions of chemicals, etc.

*Report presented at the Washington meeting (1911) of the Association of Official Agricultural Chemists. Permission to accept for publication granted primarily to American Pharmaceutical Association.

6. Tablets, pills, powders.
7. Meats of all kinds, raw, cooked, canned, sausage meats, etc.
8. Dairying products, as milk, cream, cheese, butter, cream fillers, including ice cream, etc.
9. Insect powders, dusting powders, cosmetics.
10. Cattle and poultry powders.
11. Unknown powders, wholly or partly of vegetable origin.
12. Starches, dextrins, sausage meat binders (starches).
13. Vegetable foods, as jams and jellies: fresh, pickled, cooked, canned and preserved.
14. Flours and meals.
15. Breakfast foods, infant and invalid foods.
16. Breads and similar materials; biscuits, doughnuts, cakes, pies, pastries, etc.
17. Macaroni, spaghetti and similar preparations, noodles, etc.
18. Nuts and nut-like fruits and seeds, etc.
19. Beverages of all kinds, liquids generally.
20. Pharmaceuticals of all kinds.
21. Patent and proprietary medicines.
22. Unknown foods and medicines.

In the examination of some of these substances the chemical method is all-important, as in chemicals generally; in others the microscopical method is all-important, as in meals, flours, spices; and again the bacteriological testing is all-important, as in sewage, contaminated water, contaminated milk, infected foods and drinks generally, etc. A properly equipped analytical laboratory, whether federal, state or private, should be prepared to apply all three methods. The bacteriological investigations should be made by the micro-analyst rather than by the chemist, because of the closer relationship between bacteriology and microscopy.

Just what work should or should not be done by the micro-analyst is as yet not definitely determined; at least, there is no uniformity as to scope of action in the different analytical laboratories. Based upon experience and observation, it is suggested that the following work be assigned to the micro-analyst:

1. Gross and net weight determination of all such samples as require it.
2. Moisture determination of substances which require it.
3. Ash and acid insoluble determinations of substances which are primarily subject to microscopical analysis, as vegetable drugs, pills, powders, vegetable compound powders, etc.
4. Use of certain special tests, as sublimation tests for benzoic acid, salicylic acid and boric acid; Grahe's cinchona test, wheat gluten test, color reactions for boric acid, capsicum, guaiac, salicylic acid, morphine, etc., tests for cholesterol and phytosterol crystals, and others which may prove useful.
5. Bacteriological testing of sera, vaccines, galenicals, syrups, milk, water, jams, jellies, catsups, etc., as may be required, following the method of the Society of the American Bacteriologists, and limiting the testing to determining the presence or absence of the colon bacillus and other sewage organisms, and the usual quantitative bacterial determinations for milk, water and other substances, of which the quality is usually based upon the quantitative bacterial content.

Substances subject to analysis in the laboratories mentioned should be grouped or classified according to the special or preferred methods of examination to be applied. It is, of course, evident that in the majority of cases chemical as well as microscopical methods should be applied. In some cases even all three must be

used in order that conclusive results may be obtained. The following grouping is suggested:

1. Substances in which the chemical analysis is of first importance. Chemicals generally, and chemicals in solution, alcohol, alcoholic drinks, flavoring extracts, syrups, oils, fats, etc.
2. Substances in which the microscopical analysis is of first importance—vegetable substances and preparations which are essentially of vegetable origin. Meats of all kinds, variously prepared, cooked, spiced, etc.
3. Substances in which the chemical and microscopical examinations are of equal importance—assayable vegetable drugs, all prepared food substances with chemicals in solution, compound powders, pills, tablets.
4. Substances to which the microscopical examination is not generally applied—chemicals, liquids in which the insoluble particles are slight in amount, as wines, brandies, beers, comparatively pure solutions, etc. Here the centrifuge plays an important part.
5. Substances in which the bacterial testing is of prime importance—milk, sewage or otherwise organically contaminated water supplies, and other liquids, beers, etc., contaminated foods generally. In this class of substances the microscopical and chemical examinations become necessary in addition to the bacteriological; in fact, a bacteriological test is incomplete without the use of a good compound microscope.

The work of the micro-analyst is, so to speak, on trial. The doubt in the minds of the critics is due, very largely, to the unsatisfactory results traceable to the efforts of those who are not sufficiently qualified. Even the most skillful analysts admit numerous defects and shortcomings in methods and in results. For example, the quantitative estimates based upon optical judgment are approximate only, and with most workers there is a very marked tendency to make these estimates volumetric rather than gravimetric. This can in a measure be corrected by bringing into play the judgment of the relative weights of the several substances under comparison. For example, the amount of sand present in powdered belladonna root may be volumetrically estimated at 20 per cent. In this case the acid insoluble ash residue may show 35 to 40 per cent. of silica. An example like this also indicates why the micro-analyst should make the sand and ash determinations. The percentage estimates based upon microscopical examination may vary within 25 to 50 per cent. when small amounts of admixtures are considered. For example, the actual amount of arrow-root starch in the so-called arrowroot biscuit is, I believe, 2.5 per cent. The micro-analyst's estimates may range from a trace or small amount to 5 per cent. When the quantities of admixtures are large, from 30 to 90 per cent., the estimations may approximate within 10 or 15 per cent. of the actual amount present. These estimates can no doubt be made much more accurate by uniform methods of technique, aided by certain mechanical devices. For example, in the examination of vegetable powders, spices, meals, flours and similar substances, the samples should be thoroughly mixed, and slide mounts should be of standard and uniform thickness and the relative amounts of the ingredients should be estimated by means of microscope slides having uniform ruled squares of definite measuring value in microns. These and other details in the methods should be more fully worked out.

Several micro-analysts have declared themselves as opposed to giving percentage estimates of the several ingredients of a compound. However, not to give the approximate percentages will cause great confusion and very materially lessen the value of the work done. For example, to report a pancake flour as

composed of "buckwheat and wheat flour, the former predominating," instead of "buckwheat 75 per cent. and wheat 25 per cent.," would certainly be unsatisfactory.

The following examples will serve to explain the relative value of the chemical and microscopical analyses. Suppose the substance to be examined is a baby food. The microscope may reveal approximate percentages of oil globules, steam dextrinized wheat starch, unchanged wheat and arrowroot starch, wheat tissue and milk sugar. The chemical analysis will show a definite percentage of sugar, soluble starch, insoluble starch, fat, vegetable fiber and ash. This is a good example of a case where the two methods of analysis are of equal importance; one without the other would be unsatisfactory, incomplete and inconclusive. Again, the chemical assay may show that a sample of powdered or crude belladonna leaf contains 0.35 per cent. of mydriatic alkaloids, and yet the microscopical examinations may prove the presence of 30 per cent. or more of some foreign leaf.

An adjunct in analytical work, much neglected by the chemist, is the organoleptic testing. This is especially important in the examination of unknown substances, fruit products, spices, meats, etc., as it often gives a clue to the quality of the substances and to the means of getting quick results.

The equipment and apparatus required by the micro-analyst is comparatively inexpensive, yet it is very earnestly advised to secure only those appliances which are useful or essential for the work in hand. The following list is submitted without entering into detail, as it may be assumed that the microscopist does not require detailed explanations:

1. Simple lens.
2. Compound microscope.
 - a. Ocular with micrometer scale.
 - b. Oculars, Nos. 2 and 4.
 - c. Objectives, Nos. 3, 5 and 7.
 - d. $1/12$ in. oil-immersion objective for bacteriological work.
3. Slides and covers.
4. Section knife or razor, and strop.
5. Polarizer, for the study of starches, crystals and other substances. Should be convenient to use. The selenite plates are useful.
6. Thoma-Zeiss hemacytometer; for counting yeast cells and bacteria.
7. Stage mould and spore counter, as described in this paper (Figs. 1 and 2).
8. Accurate metal or hard rubber millimeter ruler for measuring seeds (in fruit products), etc.
9. The required glassware and adjunct apparatus.
10. The required reagents.
11. Equipment for making moisture determinations.
12. Equipment for making ash determinations.
13. Equipment for the required bacteriological determinations.

The laboratory in which the work is done must be roomy, well-lighted, provided with the necessary shelves, apparatus and supply cases, reference books, etc. The details cannot be given here. The analyst must see to it that the necessary things are provided. A skillful worker should have the tools of his choice, not those selected for him by some one not qualified to judge.

It is wholly impracticable to enter into a full discussion of the technique and methods to be employed by the micro-analyst. The following are mere suggestions which, it is hoped, may serve as a guide to a unification of methods. There are many other matters of detail which cannot be discussed in a brief report, such as the preparation of standard micro-chemical reagents, use of new reagents and the discontinuance of reagents which were at one time considered of great value but which later experiences have proven to be unessential, etc.

A uniform tissue terminology is of great importance in comparing results in the critical examination of vegetable foods and drugs. The terms used should be uniformly interpreted and applied by all analysts. This does not appear to be the case, as will become evident from a comparison of the terms used by the several authors on botany and pharmacognosy. The following is a convenient classification of tissues, giving examples for purposes of ready demonstration.

Trichomes or hair cells.

Simple: Single-celled, walls thick or thin, smooth or rough, warty, etc.; as in tea, sage, apricot, peach, strawberry, raspberry, loganberry, etc.

Many-celled, as in *digitalis*, *hyoscyamus*, *belladonna*, etc. Cell-walls may be smooth or rough, warty, etc.

Aggregate or stellate: as in mallows, *castanea*, *hamamelis*, etc.

Branching; as in mullein.

Glandular; as in the mints, tobacco, nettle. Kamala and lupulin, are usually designated glands.

Emergencies: rather rare and of no special diagnostic value. Pappus, chaff, etc.

Unusual trichomatic structures: T-shaped as in *chrysanthemum*, shield-shaped as in the olive leaf, etc.

Epidermis. In plants, a single layer of cells including the trichomes above mentioned. The cells differ greatly as to thickness and form of cell-walls, as to cell-contents, etc.

Cuticle: The outer or external wall, with various projections and markings. Variable in thickness.

Vertical cell-walls: These may be wavy or straight, warty, porous, etc.

Stomata: Somewhat variable as to size but the structural variations are not sufficiently marked to be of any special diagnostic value. Their occurrence and distribution on upper and lower surfaces of leaves may be diagnostic.

Nebenzellen (neighboring cells): May be of great diagnostic value, dependent upon arrangement, number, size and form of cells and character of cell-contents.

Collenchyma. Angles of cell-walls thickened.

Parenchymatous: Cells nearly isodiametric or slightly elongated, as in gentian.

Bast-like. Cells much elongated, the usual form, as in labiate stems. (Characteristic thickenings of the angles of cells seen in transverse section.)

Palisade cells or tissue. Elongated cells usually placed vertically to surface, as the palisade tissue of the leaves, of the seed-coat (or testa) of many seeds (bean, pea, mustard, apple and quince seed, etc.)

Bast cells or bast fibers. Cell-walls with or without lignin, comparatively non-porous. Ends tapering pointed.

Typical: Greatly elongated cells, extremely flexible, colorless, usually non-lignified.

Typically developed in willow bark, in cotton-root bark, mezereum, etc.

Sclerenchymatous: Short cells with greatly thickened usually porous lignified walls.

Typically developed in the cinchona barks, cinnamon barks, sassafras bark, etc.

Branching: Cells more or less branching at the ends, as in wild-cherry bark, soap bark, etc.

Sclerenchyma or stone cells. Usually greatly thickened, porous walls, which are universally lignified. Many are of a brownish color.

Typical: Approximately isodiametric, may be thick walled, thin walled or with walls unevenly thickened. Widely distributed in the plant kingdom; found in nut shells, in fruits, in barks, in roots, etc.

Elongated or bast-like: Differ from bast cells in that the ends are truncate instead of tapering pointed.

Branching: As in tea leaves, in some nut shells, seed pits, etc.

Wood fibers or wood cells. Differ from bast in that the fibers are more firmly bound together, always lignified, more porous, and ends usually very blunt, or truncate and diagonally cut.

Tracheids. Resemble wood fibers very closely, cell-walls more porous, ends usually more tapering, always lignified. Typical bast, wood fibers and tracheids are similar as regards the diameter of fibers.

Tracheids with bordered pits: As in the coniferae.

Bast-like tracheids: Ends tapering pointed and comparatively non-porous. These are rarely of diagnostic value.

Ducts or vessels. Always lignified. The following are the types as they occur in vascular bundles:

Porous: The pores vary in form and size. Simple pores, diagonal, cats-eye pores, etc. Widely distributed among plants.

Scalariform: The fern type of duct, sparingly present in other groups.

Reticulate: A modification of the porous type. Very common in dicotyledonous herbs.

Spiral: In herbs and grasses.

Annular: In grasses, less common in other plant groups.

Parenchymatous tissues. The predominating tissue in plant parts or organs. In its typical form the cells are approximately isodiametric, rather thin-walled and rather loosely united, leaving intercellular spaces. The cell-walls are never lignified. The following are the principal types:

Parenchyma proper: Cell-walls thin, cells from isodiametric to somewhat elongated, as in roots, stems, rhizomes, tubers, etc.

Pith: The central tissue of stems, rhizomes, roots.

Bark parenchyma: Cell-walls are frequently suberized. Includes cork tissues.

Endosperm tissue of seeds: Very variable as to thickness of walls.

Fruit pulp: Thin walled, loosely united.

Pericarp parenchyma.

Leaf parenchyma or spongy tissue.

Sieve tubes. Associated with vascular bundles. Typically developed in the cucurbitaceous plants. Of no special diagnostic value.

Crystal-bearing fibers. Widely distributed in barks and in some roots and stems. Typically developed in licorice root, cascara bark, etc.

Laticiferous ducts. Typically developed in figs, in dandelion, in milkweeds, and in other plants.

Resin ducts. As in the bark and wood of pines.

Glands. As in many leaves, such as buchu, eucalyptus, pilocarpus, bay, etc.

Glandular cells. As in mace, allspice, ginger, etc. Usually contain resin and oil.

Atypical cells and tissues. Essentially formative or immature, and of very little diagnostic value. Includes the so-called phloem tissue, cambium, cork cambium, phellogen, conducting cells of the phloem portion of vascular bundles, apical cells, and immature cells generally.

The terminology as it applies to cell-contents such as oils, starches, protein granules, crystals, etc., is but little confused, and nothing more need to be said about it. There are certain micro-chemical tissue, cell and cell-content reagents, as iodine solution, zinc chlor-iodine solution, hydrated chloral solution, phloroglucin solution, acids, alkalies, etc., which are universally employed. Their preparation and use require no further elucidation.

The skilled micro-analyst has little difficulty in determining the purity and comparative quality of the simple spices, as pepper, allspice, cloves, cinnamon and ginger. However matters are quite different when it comes to the examination of powdered vegetable drugs, compound vegetable powders and vegetable products of unknown composition. A thorough knowledge of and wide familiarity with cell-forms, tissue elements and formed-cell contents is an absolute essential in order that accurately reliable and conclusive results may be obtained and serious confusion may be avoided. Such differences in the reports of findings by micro-analysts as one from time to time comes to notice are in part due to the personal equation, in part due to variable methods and differences in judgment in estimating the quantity of tissue elements present and in part (as already indicated) due to a lack of extensive and intensive experience.

Since only a very few micro-analysts have had the desirable and necessary experience in the critical examination of vegetable drugs it would prove of the greatest assistance to prepare careful descriptions of the microscopical characters of the vegetable drugs official in the United States Pharmacopoeia, such descriptions to include official fineness, the organoleptic characteristics and a brief mention of those negative histologic characters as may prove useful in determining more readily the purity and quality of the drug under examination. These descriptions to serve as authentic guides (rather than as a work of authoritative reference) for micro-analysts in federal as well as in state and private pure food and drugs laboratories. The following are submitted as examples of the proposed official descriptions. In this matter the U. S. P. Revision Committee would no doubt welcome a proposition of cooperation, as it is recommended to include a description of the microscopical characters of vegetable powders in the forthcoming ninth decennial revision of the U. S. P.

1. *ACONITUM NAPELLUS* ROOT.

a. Fineness—No. 60. Class A.*

b. Light brown color.

c. Faint odor; recalling horseradish when moistened.

d. Sweetish, soon very acridly pungent, producing a benumbing effect. Acridity marked in fauces and quite persistent.

e. Histology: Abundant rather thick-walled but otherwise typical parenchyma, filled with starch; few thin-walled, light yellowish-brown, porous mostly rectangular sclerenchyma cells; ducts porous with trace of spiral and reticulate. Starch granules compound, twos and fours and some aggregates (5 to 9); hili centric and distinct in larger granules; single granules 5 to 15 microns; polarizing bands quite distinct, broad and right angled. Typical (polygonal) thick-walled sclerenchyma and bast wanting; practically no trichomes; fibrous tissue (tracheids and wood fibers) sparingly present.

A. Fisheri and *A. variegatum* contain more abundant sclerenchyma (rectangular and often considerably elongated). Sclerenchyma wanting in Japanese aconite. All aconites acridly pungent.

2. *ATROPA BELLADONNA*, LEAF AND HERB.

a. No. 60. Class B.

b. Rather dull green to greenish brown.

c. Somewhat fragrant; heavy nauseous when moist.

d. Somewhat bitter and pungent.

* See No. 12 of Summarizing Suggestions at close of this report.

e. Largely negative characters, excepting the leaf parenchyma cells filled with micro-crystalline calcium oxalate and the usually much broken, sparingly present, thin-walled, 3- to 5-celled, simple trichomes; stem tissue abundant; characteristic seed tissue and a few oval elliptical pollen grains.

Acicular crystals, sclerenchyma cells, thick-walled trichomes or thick-walled epidermal cells, wanting.

3. *ATROPA BELLADONNA* ROOT.

2. No. 60. Class A.

b. Light brownish gray.

c. Nearly odorless—slight soil odor.

d. Sweetish; somewhat bitter and pungent.

e. Abundant typical parenchyma filled with starch; some parenchyma cells filled with micro-crystalline calcium oxalate; fibrous tissue sparingly present. Starch granules simple to compound, 6 to 17 microns; hili distinct, excentric; polarizing bands distinct in direct ratio to size of granules.

There should be comparatively little fibrous tissue; no true bast and no sclerenchyma; no trichomes and no acicular crystals.

An active committee could, within a period of one year, prepare descriptions, as indicated in the examples cited, of all of the official vegetable drugs. To do this it would be desirable to draw upon the work already done by European and American pharmacognosists, verifying and checking the results recorded by a careful reexamination of selected drug samples of known purity.

The organoleptic tests are indeed valuable adjuncts to the microscopical work. There is, however, some variation of opinion regarding the interpretation and valuation which is to be placed on comparisons of color, odor and taste, even among those having had considerable experience and endowed with a fairly normal special sense development. Our color terminology is in great confusion, and so far as the olfactory sense is concerned, there are only comparatively few odors or flavors which admit of ready comparison such as tea flavor, coffee odor, vanilla odor, raspberry flavor, loganberry flavor, and the odor of such drugs as valerian, cubeb, fenugreek, asafetida, aloes, turpentine, camphor, calamus, etc., and the odor of the spices. Our comparative judgment of tastes is more reliable. Much experience is necessary to form fairly reliable estimates of flavors (associations of tastes and odors), though pure fruit flavors are, as a rule, readily distinguishable, as that of apples, dried apples, peach, dried peach, quince and strawberry. Manufactured fruit preparations generally lose much of their flavor due to many causes, as cooking, steaming, fermentative changes, presence of decayed (mouldy) fruits, mixing of several kinds of fruits or fruit juices, etc., to say nothing of the wholly artificial or imitation fruit flavors and so-called fruit products which have little or no fruit in their composition.

We shall give a few tests which have proven especially useful in the examination of drugs and food products. It will be found that many of the test results are largely approximate, and some of them are primarily intended to serve as aids or checks to the chemical examination.

I. METHODS USEFUL IN THE EXAMINATION OF VEGETABLE DRUGS, SPICES, ETC.

1. *Mace Test.* To a pinch of the powdered mace add 10 per cent. sodium hydroxide solution. Banda or true mace changes color only slightly, whereas wild or Bombay mace turns a deep orange color.

2. *Conium Test.* To the substance to be tested for the presence of conium fruits (as anise, caraway or other umbelliferous fruits), add 25 per cent. sodium or potassium hydroxide solution. In the presence of one per cent or more of conium fruits a distinct mouse odor is developed in time (10 minutes to one-half hour). This test is not reliable with old umbelliferous fruits, as many of them develop a more or less marked mouse odor with alkalies.

3. *Lignin Test.* The classic phloroglucin-hydrochloric acid test is useful in making estimates of the amount of lignified tissue present, as in old belladonna root, aconite roots and stems, lobelia herb, fruit products, spices, etc.

4. *Grahe's Cinchona Test.* Drive the moisture from the inner surface of a small test-tube by holding it over a Bunsen burner. Into this dried test-tube place a pinch of finely powdered cinchona bark (No. 80) and heat rather carefully over an alcohol lamp or Bunsen burner. When the bark begins to char, red fumes begin to fill the tube and condense on the side of the tube as a reddish purplish liquid. The intensity of the reaction is approximately proportional (direct proportion) to the percentage of alkaloids present. Some skill and experience is necessary to perform this test well. The tube must not be heated too quickly or too much, and the powder should be uniformly fine.

5. *Beaker Sand Test.* Pour a definite amount of the powdered spice or vegetable drug into a beaker, add water, stir until the sand is washed away from the vegetable particles and settles to the bottom of the beaker. Let a stream of water run into beaker so as to wash out the vegetable matter. The final washing and decanting must be done carefully so as not to lose the sand. Salt brine may be used instead of water, should the vegetable matter have a comparatively high specific gravity. Dry sand and weigh to obtain the percentage of sand present.

6. *Ash Determination.* According to the regulation method. The percentage of the acid-insoluble residue should also be determined. It should be borne in mind that the ash determination gives only approximate results as far as the presence of clay and dirt is concerned, since the organic matter of dirt is combustible. The ash percentage varies extremely in vegetable drugs, especially in herbs and leaves. The sand percentage is comparatively high in those herbs and leaves having abundant trichomes, especially if the drug plants (or herbaceous spices) bearing such trichomes are grown in dry sandy soil. Dirt (and sand) percentage is apt to be high in roots and rhizomes, particularly when rootlets are abundant and when the gathering is carelessly done.

C. H. LaWall and H. A. Bradshaw have prepared a table of ash contents of representative air-dried crude vegetable drugs which will serve as a very valuable guide for micro-analysts, in making ash determinations.

(To be continued)

ON DRUG STANDARDS.

WILBUR L. SCOVILLE, DETROIT, MICH.

The present plan of the Pharmacopoeia of making a minimum standard of a drug the real standard for that drug is not a satisfactory plan. To say that because in certain years it is impossible to get very much stramonium, for instance, which will assay 0.25 per cent. of alkaloids, therefore it is necessary to make this lower quality a standard drug, though in other years it is comparatively easy to obtain the drug containing twice this amount of alkaloid, is not a scientific way of setting standards. It is making commercial conditions the basis of scientific usage. It is placing too much emphasis on commercial variations in drug quality.

Commercial variations must, of course, be taken into consideration, for this is

more a commercial than a scientific question, and one cannot demand impossibilities, but to make these variations the sole, or even the main, consideration is not at all necessary.

The error in the plan lies in the fact that *drugs are not in themselves medicaments, but are the material from which medicaments are made*. The real medicament is the preparation, i. e., the extract, fluidextract, tincture, or infusion or decoction. The drug itself is never used by the great majority of physicians, and but rarely used by a small minority. Even the preparations which still fill the market and contain crude drugs in small quantities, are relics of old-time methods and need revision. I refer here, of course, only to drugs which are standardized.

When a physician wishes in these days to administer aconite, or belladonna or nux vomica, he orders the tincture or extract or fluidextract—not the drug itself. Hence the *preparation*, not the drug, is the real standard of medication. This is true even to opium, when Powdered Opium, itself a standardized *preparation*, is the form used when the powdered form is desired.

So it is entirely rational to make the preparation the basis of standardization, and not the drug. It is the real medicament, and the drug is but the raw material from which it is made.

It is quite as reasonable to demand that if a low-standard drug be employed in manufacturing, enough of it shall be used to produce a satisfactory preparation, as to allow of a high-standard drug being used in a small proportion to produce a low-standard preparation. If a high-quality drug may be diluted, a low-quality drug should be multiplied. And in either case, essentially the same results are obtained in the preparation. So the important question is not whether a high-standard or a low-standard drug is employed for manufacturing, but whether the preparation made for use in medication is of standard quality.

Hence drugs should be considered as manufacturing material, and any grade which will produce standard preparations in any proportion that may be practicable, should be allowed. The Pharmacopoeia may reasonably reduce the requirements for all alkaloidal drugs, and raise the standard for preparations. Economic considerations will limit the minimum standards more effectively than any arbitrary standard.

A standard drug is mostly a hypothetical drug. Nature rarely produces it. If she ever does, it is by accident. But standard preparations are obtained facts, and can be obtained from widely varying material. Adulteration should, of course, be excluded, but natural variations should be allowed to all practical limits. It is not, in fact, necessary for the Pharmacopoeia to place any limits on the alkaloidal contents of its drugs when it establishes standards for the preparations of those drugs. Aconite must be aconite, belladonna must be belladonna, etc., but tincture of aconite must not only be made from aconite root, but must contain a stated amount of aconite alkaloids, and extract of belladonna must contain its standard amount of belladonna alkaloids as well as be made from belladonna leaves. The manufacturer deserves the credit that is due him for skill and judgment in producing acceptable results that stilted formulas do not offer him. The *product*, not the formula or method, is the important thing.

Economic considerations will force an operator to decide whether he will make

a fluidextract twice as strong as the drug that is offered, or whether he must reject that drug and insist on one two or three times as strong. But this is immaterial to the physician who desires reliable and standard medicaments, but is little concerned as to how they are obtained.

The elimination of definite standards for alkaloidal drugs would necessitate but little change in the present Pharmacopoeial formulas for preparations of those drugs, and would relieve the Pharmacopoeia from its present assumed responsibility for certain economic losses. The Eighth Revision not only recognizes that there are limits to economic production in fluidextracts and tinctures, but in a number of instances it defines what those limits may be.

For instance, it requires that *Nux Vomica* shall contain not less than 1.25 per cent. of Strychnine, but the fluidextract need contain but 1 per cent. (w.v.); that is, the fluidextract does not represent even a hypothetical standard drug.

The reason is plain enough. *Nux Vomica* is a very difficult drug to exhaust, and the Pharmacopoeia definitely recognizes the fact. But it also stands sponsor for the statement that a loss of 20 per cent. of the value of the drug is satisfactory.

Now, economic production depends upon a number of factors, such as facilities, the value of the time of the operator, waste, and personal skill. These will vary greatly. What is economical production in one place may be far from it in another. And since the Pharmacopoeia cannot restrict economic factors, it is inconsistent for it to define economic limits. Moreover, it is quite unnecessary. Practically the only attention paid to it at present is to take advantage of the allowance.

But if the Pharmacopoeia makes the fluidextract the basis of standardization and simply directs that it, in this case, shall be made from *Nux Vomica* of undefined alkaloidal strength (or of hypothetical strength), but must contain a stated amount of alkaloids, and must be made with a stated menstruum, then the operator must be responsible not only for the product, but for economic production. This is simply a law of production which has been hitherto applied to all commercial products except pharmaceuticals. It should now be applied to these. Such a function does not belong to the Pharmacopoeia.

In support of the contention that drugs, in themselves are but manufacturing material, let me call attention to the fact that in the present formulas of the Pharmacopoeia but one alkaloidal drug is used as such. Powdered *Ipeca* is used in Powder of *Ipecac* and *Opium*, and in Compound Laxative Pills. The latter is to be dropped, leaving but one for the next Pharmacopoeia. Besides this, Powdered *Jalap*—a resin-standardized drug—is used in Compound Powder of *Jalap*.

Just two preparations for the next Pharmacopoeia in which standardized powdered drugs are used, and both of these are relics of old-time pharmacy and had their reputations established long before standardization came into use. It is indeed a question whether the amount of alkaloids in the *Ipecac* used in *Dover's Powder* is of any real consequence.

In other instances in which powdered drugs are used in preparations, by far the greater number are used as flavors, diluents, or excipients. Extracts have in most cases taken the place of powdered drugs in pills, ointments, suppositories, etc., and the tendency is strongly in that direction. It is of advantage to encourage that tendency. The plan here proposed will do that.

In the following lists are given the results of numerous assays of alkaloidal drugs, extending over a period of 6 to 10 years, and which indicate normal variations in those drugs. It is not expected that final deductions will be made from these lists alone, for other similar reports are available. But these are offered as a contribution on which a new plan of standardization may be based. The plan, not the suggested standards, is the real issue.

Aconite.

12 below	0.55%
6 between.....0.55 and 0.65%	
6 between.....0.65 and 0.75%	
3 above	0.75%

—
27 assays.

Fluidextract should represent 0.65% w.v.
Tincture should represent 0.065 w.v.

Belladonna Leaf.

12 below	0.26%
43 between.....0.26 and 0.35%	
35 between.....0.35 and 0.45%	
15 above	0.45%

—
105 assays.

Extract should represent 1.6% alkaloids.
Tincture should represent 0.04% alkaloids.

Belladonna Root.

10 below	0.36%
32 between.....0.36 and 0.46%	
35 between.....0.46 and 0.56%	
12 above	0.56%

—
89 assays.

Fluidextract should represent 0.50% w.v.

Colchichum Seed.

7 below	0.56%
4 between.....0.56 and 0.76%	
3 above	0.76%

—
14 assays.

Fluidextract should represent 0.60% w.v.
Tincture should represent 0.06% w.v.

Hydrastis.

8 below	2.5%
8 between.....2.5 and 3.0%	
12 between.....3.0 and 3.5%	
6 above	3.5%

—
34 assays.

Fluidextract should represent 3.0% alkaloids w.v.
Tincture should represent 0.6% alkaloids w.v.

Guarana.

7 below	4%
10 between.....4 and 4.5	

—
17 assays.

Fluidextract should represent 4% w.v.

Hyoscyamus.

17 below	0.05%
20 between.....0.05 and 0.07%	
24 between.....0.07 and 0.08%	
16 between.....0.08 and 0.10%	
11 above	0.10%

—
88 assays.

Extract should contain 0.30%.
Fluidextract should contain 0.750% w.v.
Tincture should contain 0.0075% w.v.

Ipecac.

14 below	1.75%
31 between.....1.75 and 2.0%	
17 between.....2.0 and 2.25%	
16 above	2.25%

—
78 assays.

Fluidextract should contain 2.0% w.v.

Nux Vomica.

Fluidextract should contain 2.0% alkaloids.

Physostigma

5 assays.....	0.11 to 0.75%
Extract should contain	2.0%.
Tincture should contain	0.02%.

Pilocarpus.

6 below	0.60%
2 between.....0.60 and 0.75%	
5 above	0.75%

—
13 assays.

Fluidextract should contain 0.75% w.v.

Stramonium Leaf.

9 below	0.26%
57 between.....0.25 and 0.36%	
36 between.....0.36 and 0.45%	
8 above	0.45%

—
110 assays.

Extract should contain 1.5%.
Tincture should contain 0.835% w.v.

DISCUSSION.

Charles Caspari, Jr., asked Mr. Scoville whether he leaned to the idea that all standards throughout the world of crude drugs should be abolished in the Pharmacopoeia. Mr. Scoville responded that he thought this would be a wise thing to do. He referred, of course,

to alkaloidal standards only, not botanical. His position was that the process of assay should be continued, but that no standard should be required. Mr. Caspari suggested that it was the purpose of the process to determine the alkaloidal content, and the different processes would yield different percentages of alkaloid. Mr. Scoville agreed to this, but said the process itself should be standardized.

Continuing, Mr. Caspari said he could see where the retail pharmacist would be put in a pitiable condition by the elimination of all standards as to crude drugs for the Pharmacopoeia; that if the Pharmacopoeia gave an assay method, without attempting to apply it to a standard, it would not be used at all by the retail pharmacist. If the Pharmacopoeia did not demand a minimum alkaloidal strength or standard for drugs, any kind of belladonna leaf, for example, might be considered to answer, whether the alkaloidal percentage of the leaf ran down as low as two-tenths or up as high as eight-tenths. Very few retail pharmacists, he said, standardized their preparations. He could see where this would be an excellent plan for the manufacturers, but he thought the minimum standard required by the Pharmacopoeia was not only a safeguard, but an absolute necessity, for those retail pharmacists who choose to make their own preparations. Without a minimum standard, the pharmacist might proceed to exhaust a drug very carefully, and then reason that, as he had done so, he must necessarily have about the required amount of alkaloid in the finished product. This situation, Mr. Caspari said, had been brought forcibly to his attention in the last year, in his new work of drug-control for the state of Maryland, where many pharmacists had been brought before the commission for putting forth preparations too low in strength—laudanum and other preparations. They had not tested their drugs nor standardized their preparations, but thought that if they used a certain per cent. of powdered opium, for illustration, they would get a certain per cent. of the tincture of opium afterwards. The manufacturer, Mr. Caspari said, was already protected, because he had the right, under the law, to buy a two-per cent. drug, if he desired to do so. He expressed the hope that Mr. Scoville would not push this to the point of asking the Revision Committee to abolish all standards. He could see trouble for the retail pharmacist, if this suggestion was carried out. As Mr. Scoville has stated, nature had not been so kind as to produce drugs of uniform alkaloidal strength,—aconite, belladonna, hyoscyamus, and so on,—and if the retail pharmacist was not to be entirely eliminated, a minimum standard for crude drugs was necessary for his guidance. The standardization of preparations was all right, but this did not do away with the necessity for a minimum standard for crude drugs. Mr. Caspari concluded by saying that he could not see the force of the claim that alkaloidal standards for crude drugs should be abolished.

Mr. Frederick T. Gordon said he did not think Mr. Scoville could have been present at the meeting of the Section on Education and Legislation last night and heard Mr. Rusby's address there, in which he showed the vital necessity of the accuracy of the Pharmacopoeial definitions. He said that if there were not Pharmacopoeial standards for the alkaloids of crude drugs, the importation of practically anything in the way of crude drugs would be permissible. As an example of the undesirable proposals to alter the Pharmacopoeial requirements as to crude drugs imported into this country, he instanced the case of colocynth, and quoted from Mr. Rusby's paper to show that it was now being urged by certain interested parties that the word "peeled" be omitted from the definition, so that the Federal authorities would hereafter be required to prevent the importation of this drug, all of which was peeled. Mr. Gordon expressed it as his opinion that it was absolutely essential that a minimum standard for all alkaloidal drugs should be established in the Pharmacopoeia, and that none of these drugs should be admitted into the country below the standard set.

Charles E. Caspari thought that if Mr. Scoville's idea was carried out, the best thing to do was to omit from the Pharmacopoeia all crude drugs. What was the use, he asked, of having belladonna official, if there was no standard for it? If it was not used in powdered form in any galenical or medicine, but only used in the preparation, why have a standard at all? The tendency had been to establish a purity rubric in the Pharmacopoeia, and then determine whether or not the article in question satisfied that rubric. The standard for an alkaloidal drug corresponded to the rubric for purity of a chemical. Mr. Caspari thought,

however, that the legal aspect of this matter was far more important than the value of it to the manufacturing or retail pharmacist. His idea was, that if the standard for the drug was omitted, then the drug should be omitted altogether from the Pharmacopoeia. The statement made by the writer that the minimum quality or standard should be taken as the official one, he heartily concurred in; but simply because from year to year certain plants did not produce a uniform alkaloidal content was no reason, in his opinion, why the minimum should be changed or done away with. He thought the Pharmacopoeial Committee should have the right to state what the standard should be, regardless of fluctuating conditions. Whether the preparation should be standardized, he thought, should depend on whether the therapeutic or pharmaceutical results were the same. Take cinchona, for illustration: There was a standard for its quinine content, but a very loose standard for the other alkaloids present, although it was well known that the therapeutic action of cinchona depended not wholly upon the quinine, nor wholly upon the other alkaloids; it was quite possible that the therapeutic effect of the different alkaloids present might in some way modify the ultimate therapeutic action.

Chairman F. R. Eldred said that while he recognized the difficulties attending the fixing of a minimum standard, owing to the fluctuations of the strength of crude drugs from year to year, nevertheless he regarded it as imperative that such a standard should be established—though it should not be fixed so high that, in some years, we would be utterly unable to obtain the standard drug. He agreed with Chas. Caspari, Jr., that it would do an injustice to the retail pharmacist to deprive him of such standards, as it would open the way to his having any kind of drugs put on him, without any recourse whatever. He likewise believed it would work a hardship on the manufacturer. In some cases it was very difficult to obtain the drug at all, because it was not admitted; there had been great scarcity of certain drugs on that account. This, however, was the lesser of the two evils. The manufacturer would be in worse shape if any kind of drug was admitted to the country, and would find it more difficult to get good drugs than now, when they were in a measure protected by the minimum standard. If a drug were shown to be below the minimum standard, he could reject it; otherwise, he might have to accept it, because while they would buy on sample, sampling as it was carried on today by the dealers was very unsatisfactory, and in many cases the manufacturers received samples entirely too small to represent the lot of drug. He cited a case where the house with which he was connected had attempted to prove forty bales of nux vomica, where all the samples submitted had probably been taken out of one bag. They therefore declined to make use of any samples taken in a way not reasonably safe to indicate the value of the drug. He believed that minimum standards were necessary for the protection of the retail pharmacist.

Chas. Caspari, Jr., emphasized the statement that a minimum alkaloidal standard should be maintained in the Pharmacopoeia. As shown by Mr. Rusby's paper last night, unless a minimum standard was demanded for a crude drug, a miller might purchase a thousand pounds of belladonna, say, grind it and sell it to the retail trade of the country, and if it happened to be a low grade of belladonna,—or a low grade of pilocarpus, for example,—if he had a Pharmacopoeial standard, he could quickly test the drug, and thus get the official preparation. Without such a standard, he was absolutely at sea.

Mr. Scoville might suggest that he assay the crude drug; but he might do that and find it so low grade that it could not be used at all. Mr. Caspari said that though he was not now recognized as a retail pharmacist, he confessed to having a warm spot in his heart for him, and he desired to give him all the protection possible, and he was earnestly in favor of the retention of minimum standards in the Pharmacopoeia.

Charles E. Caspari, speaking again on this subject, said that Mr. Scoville might go a step farther, and suggest the omission even of galenical preparations from the Pharmacopoeia, because, after all was said and done, it was the alkaloid in drugs that produced the therapeutic effect; and, therefore, if it was desired to give aconite, why not give aconitine? And so with opium, and other drugs.

Mr. F. T. Gordon also spoke again on this subject, and said that this whole matter revolved around the question of dollars and cents. He was satisfied that if the Pharmacopoeia

contained no standards for crude drugs, the United States would become a dumping-ground for inferior drugs. The pure foods and drugs laws of the several states were based on the Pharmacopoeia, practically, and if no standard was established, anything would be permissible. He agreed with Mr. Scoville that the standardization of the finished product was highly important, because that was what was used by the patient; but this was not all of it. Those engaged in the wholesale drug business were not in the business for their health, but to make money out of it, and he believed that it was absolutely necessary to retain minimum standards in the Pharmacopoeia for the protection of the retail pharmacist.

Mr. Scoville closed the discussion upon his paper, and defended his position. He said that when he wrote this paper and spoke of it to a friend, he had been warned that he was "liable to get into hot water;" that he had proposed a radical thing, and one that would meet with strong opposition. The discussion this morning had shown that he had failed to make himself clear. First, he had stated that the Pharmacopoeial method of making a minimum standard was not very desirable, and nobody had objected. Second, he had said that crude drugs were not the medicaments used, but the raw material from which they were made, and nobody had objected. Then he had said that the Pharmacopoeia should not have fixed standards for crude drugs, and here was where the trouble had come. This did not mean, he said, that standard drugs would not be sold. They were sold long before the Pharmacopoeia had made such requirement. Standard drugs had been sold for thirty years or more.

Mr. Scoville said that he could not see the logic of saying that the manufacturer or large dealer must be restricted, and the retail pharmacist trusted to do absolutely the honest thing. He did not think the retail pharmacist was any better or any worse than anybody else, on the average. It was the same thing here as if the state of Colorado were to say to a man, "You cannot take any ore out of this mine, unless it shows a certain percentage of gold to the ton, and then you can do anything you like." This was where the standardization of drugs was at fault. The only thing that the public used—that which produced the medicinal effect—was the preparation, and it could not be assumed that because a drug was up to a certain standard the preparation was all right. He was not making any plea for the manufacturers, for they could take care of themselves, but his position meant an elevation in standards. It meant that the minimum standard for crude drugs should no longer prevail, but that the actual strength of the preparation should be found. The whole question hinged upon what the public used. The retail pharmacist would not be hurt, because assayed drugs would be on the market, subject to his order. As to the point that had been made that some drugs might fall as low as one-fifth of the standard now required, Mr. Scoville claimed that it would not be economical to use drugs of that low grade. The idea was for the druggist to control his preparations; if not, he was not protecting the public. As matters stood now, the inspectors were given something to talk about, but that was all. Where drugs could not be standardized, restrictions must be placed around them as far as possible. But where the preparation, the thing used, could be controlled, it could be told whether it was of the proper quality and strength. This was his contention. Mr. Scoville said he did not suppose this would knock the standards out of the Pharmacopoeia, but he believed it would lead to it in time, simply because it was right.

In conclusion, Mr. Scoville said he was not opposing any laws, and not intending to put any obstruction in the way of legal protection. He did not see how it would make any difference to the retail pharmacist, but did see that the drug inspectors might be bothered; "but without that bother," he said, "your pure food inspection does not amount to that!" (a snap of his fingers). To sum up his position, he thought the Pharmacopoeia had better recognize the differences existing in the raw materials of medication, and pay more attention to what the patient was actually taking.

Section on Pharmacopœias and Formularies

Papers Presented at the Sixtieth Annual Convention

PRACTICAL SUGGESTIONS ON PHARMACOPŒIAL REVISION.

R. H. NEEDHAM, PH. C.

A Pharmacopœia is primarily a book of standards. The establishment of standards must be left to those men who are thoroughly familiar with pharmaceutical and physiological chemistry and drug assaying. We trust that these men will adopt only those short and concise processes which are adaptable to ordinary conditions, such as will be found in most of the laboratories of Colleges of Pharmacy.

In considering the subject of revision the most important question would appear to be, "What shall be revised; or rather, what shall be retained, dropped or added?" For one, I am more interested in what drugs shall be dropped, than I am in what drugs shall be retained or added. Past experience has demonstrated that there will be plenty of drugs retained and a host will knock for admittance, enough in all to make a book twice as large as the last revision.

I will try to confine my remarks to crude organic drugs and salts, taking up the different ones *sine seriatim*, commenting as I proceed. I might enumerate them much more rapidly, but simply listing them would be tiresome and uninteresting, besides I would fail utterly in creating the impression I wish to make.

I firmly believe the following drugs I am about to enumerate should be dropped from the Pharmacopœia and I will set forth my reasons with each drug as it is taken up. Having spent a number of years in a pharmacy and medical school, and being connected with a hospital, and keeping in close touch with clinical work and the drug trade, I feel that at least some of my criticisms are well founded and deserve attention and consideration.

CHONDRUS is almost unheard of outside of the *Materia Medica*s and the National Formulary, where a single preparation is mentioned.

ULMUS is never sold as a mucilage, the whole bark cannot be adulterated and the powdered is rarely.

HUMULUS is valuable only as a source of Lupulin, the hops being sold in packages loose pressed or packed, coming under the Pure Food label.

STAPHISAGRIA is good for *Pediculi*, but evidently Kerosene is used forty times to its once.

PAIREIRA is noted for the interest that it arouses in the study of vegetable histology; its concentric zones and wood wedges placing it in a class peculiar to itself.

GUAIACUM is a resinous product that every one knows deteriorates with age and exposure, losing its efficiency as a tonic and alterative. Those doing work in

urinalysis know that tincture made from the above is worthless. Physicians obtain better results with fresh tincture in treatment of rheumatism. I plead that guaiac wood as chips or raspings take its place, giving the druggist something with which to make a fresh tincture, so useful in making blood tests.

LIMONIS SUCCUS should be left to the soda fountain men, who are using lime juice and other vegetable acids in place of it.

RHUS GLABRA is never used nor prescribed except in prescriptions' examples. Its use as a remedial agent amounts to nothing.

MEZEREUM has long enjoyed the reputation of an anti-syphilitic, but should give way to more effective remedies.

SUMBUL seems to be used only in patents and proprietaries, and as such only is it prescribed.

MANNA should be dropped with the only preparation into which it enters, i. e. Compound Infusion of Senna, another heirloom preparation.

APOCYNUM may be a good diuretic, but it is nowhere near digitalis, when it comes to prescriptions and the treatment of diseases requiring a diuretic and heart stimulant.

PEPO, poor old pumpkin seed, belongs with the other melon seeds, and should be listed in seed catalogues. Grandmas will always continue to use it, but the space it takes up in the U. S. P. can be put to better use.

ELATERINUM is useful to make students study, as it enters into the only official triturate. No one doubts its purgative effect, but very few physicians or druggists have ever seen the triturate or elaterinum.

TARAXACUM, like Sarsaparilla, will be hard to throw out, as it has a reputation established by generations of prescribers and users. All the same, it should go, for there are many other better bitter tonics. The pharmaceutical manufacturers may desire that the dandelion be retained for their sole benefit, but I am in favor of letting it go.

LACTUCARIUM. Let us open the door and throw this drug out. Its sole use as far as I can find has been to add work in materia medica and to theoretically make tincture and syrup of lactucarium.

OPII DEODORATA. This preparation of opium has no right to a place in the Pharmacopœia, as there is not a single preparation into which it enters, besides we have deodorized tincture of opium made by quite a different process. Once in a great while a physician prescribes Pulvis Opii Deodorata, though the deodorized tincture is more frequently used in prescriptions. There is no necessity for retaining granulated opium, as anyone knows, who has ever made laudanum, that the granular form of the powder does not aid in the least bit and that the powdered opium works just as well.

PYRETHRUM. There is little or no demand for the root or its preparations, which is not used internally.

MOSCHUS. Principally used by perfumers; neither it nor the tincture is ever prescribed any more, bromides and other sedatives having completely taken its place. Besides, pure Tonquin Musk is too high in price to make it a profitable prescription drug, were it used. I call this drug an heirloom also.

Under the salts, there are a number of small therapeutic value and their sale is little or nothing. I will confine my remarks to those salts which are of slight interest to either physician or druggist.

SODII ACETAS is taking up space in the Pharmacopœia needlessly, as Potassium Actetate is almost universally prescribed.

SODII BISULPHIS is so similar in use and action to sodium sulphite that we have no need of this salt in the Pharmacopœia. Many drug stores never stock this drug, as there is no demand for it.

SODII CHLORAS, like its very similar preparation, Potassium Chlorate, is used entirely in mouth washes and gargles and for making chlorine water. It is never prescribed.

SODII PHENOLSULPHONAS. For a number of years we have been observing the clinical results of all the phenolsulphonates, with the conclusion that they are very unreliable. So convinced are the practitioners of this failure on the part of the salts as to their value as intestinal antiseptics that they have ceased to be prescribed, the formaldehyde compounds having taken their place.

AMMONII IODIDUM. A very deliquescent salt, almost impossible to keep in a crystalline form, used once in a great while in place of potassium iodide and in liniments. This salt is always a loss to the druggist and if wanted in liniments the physician can prescribe tincture of iodine and ammonia water.

MANAGNI SULPHAS as a tonic has completely fallen into disuse, other tonics having taken its place. Let us drop it.

LITHII CARBONAS. A salt with a reputation never established. Said to be a uric acid and calculi solvent, but probably insoluble in the stomach. Its affinity for acid phosphates is questionable.

CERII OXALAS. Another heirloom from previous Pharmacopœias, which has passed, as the late Grover Cleveland would say, "into innocuous desuetude." I suggest that it remain that way and not be retained in the Pharmacopœia. As a sedative for nausea it is no longer used.

BETANAPHITHOL. A coal tar derivative of little antiseptic value in medicine. Once in a while it is prescribed, but not enough to warrant its retention in the U. S. P. I would also suggest dropping the spirit of nitroglycerin which as a spirit is completely surpassed in strength and efficiency when used as nitroglycerin straight in granules—not tablets.

I further suggest the following additions:

SANTALUM ALBUM. It is just as important that this drug, which is the source of the Oil of Santal, should be made official as that castor and croton beans retain their respective places. (Castor and croton "beans" are not official.—Editor.)

ILLICIIUM. Why should oil made from star anise be excluded while it contains the same constituents as the oil made from anise seed? (Star anise oil is recognized by the U. S. P.—Editor.)

ABRUS. Jequirity is used only in eye practice and is a valuable remedy. The tincture or infusion should be made official, so that druggists may make up a preparation of this drug if they desire.

COCILLANA. It has been demonstrated beyond a doubt that this is a valuable expectorant, superior to ipecac, as it is not so apt to produce nausea.

MYRCIA. Let us restore Bay Leaves to the U. S. P., and Bay Rum also. It compares much more favorably with some other drugs that are retained which have no official preparations.

ICHTHYOL. Another preparation being used on a very large scale in making ointments. Very popular with physicians for swellings, or chills, etc.

ACETYL-SALICYLIC ACID. Safer than the more depressant coal tar derivatives, is efficient as an antipyretic and diaphoretic and, last but not least, is one of the best sellers in the drug stores today.

I have made these criticisms with a view of bringing to our attention some of the needless and, in most cases, worthless drugs which have long taken up space in the U. S. P. I have looked at them from a therapeutic standpoint, and a commercial one, too. I believe that the Pharmacopœia should be a book of standards of drugs which are used and sold continually in our drug stores. In keeping many of the criticised drugs in the U. S. P. we not only lessen the prestige of that work, but we bring criticism upon ourselves and compel students of pharmacy and materia medica to study and learn drugs many of which they will never see, sell nor prescribe. We want a U. S. P. of the highest standards possible to attain, at the same time one of practical utility for intensely practical men. To some this paper will savor too much of commercialism, especially to our more scientific men, but I assert that in order to benefit the greatest number in pharmacy and medicine, every drug and process of assay or test must be as simple, as practical, as it can possibly be made. To this end let the revision committee work their way, eliminating all dross and retaining only those drugs of worth and merit.

DISCUSSION.

Prof. J. P. Remington said he supposed, to begin with, that Mr. Needham meant here to reflect his own personal views, of course. He did not know how many communications he had received in which the writers expressed diametrically opposite views. Of course, the paper would come to the Committee of Revision, and he would send it out to each member of the committee personally, as he always did in such cases. But to take sodium nitrate, for instance: That was not put in the Pharmacopœia because of its use at the prescription desk; it was put in because of its use in the process of making spirit of nitrous ether. And so with a great many other things. When the Pharmacopœia defined an article, it was necessary to give the ingredients which went to make up that article; also, how would the pharmacist know when it was pure? This was particularly puzzling to the doctors, who had great difficulty in understanding why an article which was not prescribed as such should be retained in the Pharmacopœia. One doctor, for illustration, at one time, had made quite merry over the introduction of figs and prunes in the Pharmacopœia, and expressed the opinion that it would be all right to have them in a grocery-store, but he could not understand their place in the Pharmacopœia. Of course the answer was that they were used in combination with senna. This combination had now been dropped, and prunes and figs had gone out of the Pharmacopœia.

Prof. Philip Asher said that Mr. Needham was of course voicing his own views, but he should understand that in a radius of a few hundred miles there was often an entirely different disposition on the part of physicians as to the articles they prescribed. Mr. Needham, for instance, was perhaps not more than five hundred miles from New Orleans, yet a large number of preparations the writer had mentioned the speaker had made extensively. Tincture

of musk was one of these. He had made tincture of musk in pint quantities. At one time he had no call for musk; then, for a short space of time, he had a good deal of demand for it. Lead iodide he had made in five and ten-pound batches many times. While the views of Mr. Needham showed the true status of certain localities, it was not true as to others.

Prof. H. V. Army instanced the case of tamarinds, largely used in New Orleans, but concerning which nothing was known in Cleveland. Only one boy in his class of fifty there had tamarinds in his drug-store. On the other hand, an article that might be very popular in Cleveland or Philadelphia would never be heard of in New Orleans. He believed that all realized that Mr. Needham's contribution was a valuable one, but this proposition of wide and varied distribution of articles prescribed was an important point to bear in mind.

Prof. A. H. Clark pointed out that in the city of Chicago articles were called for every day on the North Side that were never called for six miles away on Michigan avenue, and he knew that the drug-stores on the South Side had calls for certain articles that were never heard of in any other section of the city. As another illustration of how this worked, for a number of years he had been engaged in a small town in Illinois of some three hundred inhabitants. He moved away to a larger place, of some 40,000 inhabitants, only about fifteen miles distant, and he had to "learn the whole drug business all over again." So just a difference of a few miles made the widest difference in the character of drugs prescribed in many cases.

Prof. C. E. Mollet said this discussion had demonstrated the difficulties that the Revision Committee must confront at each revision period. He was opposed to dropping any subject or any substance from the Pharmacopœia so long as it was found on the markets of the United States. Without some standard as long as these drugs were sold it was utterly impossible for the Pure Drug authorities to compel them to come up to standard.

Speaking again to the subject, Prof. Remington said if the members would look on the title page of the Pharmacopœia they would read these words: "The Pharmacopœia of the United States of America." While it was true that there were plenty of things in the Pharmacopœia that the doctors in Chicago never thought of using, it was equally true that the doctors in Texas or somewhere else did use them largely, and the doctor there was just as much entitled to a standard for his preparations as the doctor in Chicago, or Philadelphia, or New York, who had never heard of these articles. This was a criticism that they heard from the physicians continually, and it was hard to get them to understand. One physician might get along on a hundred things in the Pharmacopœia, and be just as good as another who used a hundred others. But one doctor's hundred things would be totally different from some other doctor's hundred things, and the Pharmacopœia has to be big enough to suit both of them.

INFLUENCE OF ADRENINE AND CHOLINE ON THE DETERMINATION OF SEX.

From experiments on guinea pigs it is found that when animals are put under the influence of adrenine, previous to conception, the number of males, in subsequent litters is greatly above the normal. As a rule 60 per cent. of the litter are males; when the mother has been subjected to adrenine injection, however, the proportion rises to 84.3 per cent. Choline has the opposite effect. Guinea pigs under its influence give birth to more females, to the extent of 90 per cent. It has previously been claimed by the author that in the human species adrenine may be detected in the urine of the pregnant subject if the child is male. Three recent cases have confirmed this. Adrenine was found in the urine of two cases, and the predicted birth of a male was verified in each case. In the other instance no adrenine was found. The diagnosis of a female child was also confirmed by the event.—R. Robinson (*Comptes rend.*, 1912, 154, 1,634).—*Pharm. Jour. and Pharmacist*.

Section on Education and Legislation

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE SECTION ON EDUCATION AND LEGISLATION.*

FIRST SESSION.—Wednesday morning, August 21, 1912.

The first session of the Section on Education and Legislation was called to order by Chairman John F. Wallace, of Pennsylvania, at 11 o'clock A. M., in the ball-room of the hotel. Secretary W. J. Teeters, of Iowa, was present, as was also Associate Philip Asher, of New Orleans. Associates H. D. Knisely, of Oklahoma, and L. D. Havenhill, of Kansas, were not present. Mr. Asher was called to preside while the Chairman read his address. (See September Journal, p. 936.)

The Acting-Chairman called for action on the Chairman's Address, and Mr. F. W. Meissner moved that it be received and referred to a committee of five, to be appointed by the Chair. This motion was seconded by Mr. W. B. Philip, who stated that in California cocaine could not be sold except on physician's prescription—that of a registered physician, in his own handwriting, stating the name of the patient; and the prescription not to be refilled.

Mr. Meissner's motion was adopted, and the Acting-Chairman appointed on the committee of five Messrs. L. A. Seltzer, of Michigan; Louis Emanuel, of Pennsylvania; Wm. B. Day, of Chicago; F. W. Meissner, of Indiana, and Frank H. Freericks, of Ohio.

Chairman Wallace resumed the chair, and called for report of the Secretary as the next order of business. (See September Journal, p. 943.)

The Chair called for action on the report of the Secretary, and Mr. Anderson moved that it be received and referred to the Committee on Chairman's Address. He also asked for a slight correction in the reference made to New York City, in that the report stated that upon completion of a three years' course following two years of high school work the degree of Bachelor of Science in Pharmacy would be given, whereas it should have been stated as following a four years' course instead of three.

This motion was duly adopted.

The Chair stated that the next thing in order was the report of the Committee on Drug Reform, but he had been informed by Chairman Sayre that this report was read before the Section on Scientific Papers on yesterday.

The Chair stated that he had a paper from G. H. P. Lichthardt, of Sacramento, the title of which had not reached him until after the program had gone to the printer. Without objection, he said he would ask Mr. Lichthardt to read his paper now.

Mr. Lichthardt then read his paper entitled "A Quotation," based upon an in-

*Papers and reports which do not appear here will be printed in later issues.

interview with a U. S. Customs Inspector, published in a Sacramento, (Calif.) paper, and dealing with the smuggling of opium into the United States.

The paper was discussed by Messrs. F. T. Gordon, Chas. J. Clayton, Thos. F. Main, Albert Schneider, Geo. H. P. Lichthardt, Wm. C. Anderson, C. M. Woodruff, and F. H. Freericks.

The Chair asked if there was any further discussion of this paper, and none being offered it was referred for publication.

The Chair called on Mr. Cornelius Osseward, of Seattle, Wash., to read a paper entitled, "Trade Marks Pertaining to Medicinal Compounds."

Mr. Osseward's paper was discussed by Messrs. Albert Schneider, Charles M. Woodruff, Philip Asher, I. A. Becker, W. J. Frazier, H. C. Shuptrine, G. H. P. Lichthardt, and the author of the paper, Mr. Osseward.

W. C. Anderson raised the point of order that the discussion had wandered away from the subject of the paper, and moved that the latter be referred to the Council without recommendation. The motion was seconded by Mr. F. T. Gordon, and after some further discussion it was so ordered.

On motion of Albert Schneider the Section then adjourned to 8 P. M.

SECOND SESSION.—Wednesday evening, August 21, 1912.

The second session of the Section on Education and Legislation was called to order by Chairman Wallace at 8:15 P. M., in the ball-room of the Brown Palace Hotel.

The Chair called attention to the large number of papers before the Section, and stated the practical necessity of limiting the discussions.

Thereupon, Mr. Shuptrine, of Georgia, moved that discussions be limited to three minutes, and this motion was seconded by Mr. Frazier and carried.

The Chair called upon Albert Schneider, of San Francisco, to present his paper on "The Status of Pharmaceutical Education and Legislation on the Pacific Coast."

Mr. Schneider stated that he had no paper prepared on this subject, but only a few notes. When speaking of the Pacific Coast, he said he had in mind the three states of California, Oregon and Washington. California, he said, had three schools of Pharmacy: The Department of Pharmacy of the University of California, with which he was connected; the Department of Pharmacy of the University of Southern California with which Professor A. Maas, who was present, was connected, and the Department of Pharmacy of the College of Physicians and Surgeons of the city of San Francisco. The Department of Pharmacy of the University of California gave a two-year course and a three-year course, the two-year course requiring for entrance two years of high school work or its equivalent, and the three-year course conferring the degree of Bachelor of Pharmacy upon university entrance and three years of college work. In 1915, according to the ruling of the regents of the University, the degree of Bachelor of Pharmacy would be conferred only upon completion of four years of college and university work. The probabilities were that three years of pharmacy work would be required, plus some work in the academic departments. He was not sure about the College of Physicians and Surgeons, but thought there were no en-

trance requirements beyond what was usually spoken of as a grammar school education. He knew nothing of their laboratories or courses of instruction. The Department of Pharmacy of the University of Southern California had complied, so far as he knew, with the minimum requirements of the Conference of Faculties. They had made application for the first time this year, which indicated that the department was about five or six years old. In addition to this, Mr. Schneider said, there was a quizz course conducted in the city of San Francisco, intended to prepare for State Board examinations. The fees for this course were \$25 and \$50. Those taking the \$50-course usually passed, but those taking the \$25-course did not always pass.

As to state laws, Mr. Schneider said California had a pharmacy law with which many of the pharmacists were satisfied. This law, as far as it went, was excellent, but it did not fully meet the views of the progressive pharmacists of the state, and two years ago they had formulated a law, modeled after the New York law, but adapted to California conditions, and this law was presented before the last State Legislature. The non-progressives immediately made war upon it, and the progressives, in turn, saw to it that the non-progressives got nothing they asked for. So the result of this conflict was *nil*. He thought however the probabilities were that, at the next session of the Legislature, they would secure the enactment of a graduation prerequisite provision, which was the principal bone of contention between the factions. It was the same in California as elsewhere, there were two kinds of individuals, those who made a name for themselves by honest, worthy effort, and those who attracted attention to themselves by attacking those who made such efforts. As far as he could learn, the non-progressives in his state were actuated by no higher motive than the simple purpose of opposing the progressives. They seemed to have absolutely no objection to the proposed legislation, and the spirit of opposition alone seemed to be the influencing factor that induced them to come up to Sacramento and use time and effort in the attempt to nullify any forward movement. California also had an excellent narcotic law, an excellent vendor's act, and a most excellent poison law. The Pure Food and Drugs Law in California was divided into two distinct parts, one relating to food and the other to drugs. The drugs section of the law was administered by the State Board of Health. An effort would be made to turn this over to the Board of Pharmacy, but they had been told that the Board of Pharmacy must first show some evidence that it was competent to administer the law. The progressives had agreed to wait until a competent board was put in office, and hoped that this would happen in a very short time. Mr. Schneider said he did not wish to appear as criticising the California Board of Pharmacy, for it was known as an extremely active one. It had gone after the narcotic evil and had expended a vast amount of money, as shown by the reports published by the State Department of Health, at the direction of the Board of Pharmacy. He believed the California Board of Pharmacy was the most active board west of the Mississippi River, and he thought his State Association was as active as any in the country. The old State Pharmaceutical Society had been dead for fourteen years previous to 1903—but at that time the California Pharmaceutical Association, which this year held its sixth annual meeting at Del Monte, was organized.

Mr. Schneider said that Oregon had one college of pharmacy located at Corvallis—a Department of Pharmacy of the Oregon Agricultural College. The college of pharmacy was maintained by the State and two courses were given, one conferring the degree of Pharmaceutical Chemist, (Ph. C.) and the other Bachelor of Science, (B. S.) The first required four years of high school work—the university entrance—and two years of college instruction. The second required university entrance and four years college instruction. There was no separate school of pharmacy, and the students, as far as possible, took the work with the regular University students and those in academic work. The course of instruction at the Corvallis college of pharmacy was free, with the exception of a matriculation fee of \$5.00, plus a small fee for laboratory breakage, the total perhaps, amounting to \$15 or \$20 a year.

Oregon had, of course, a State Association, perhaps not as large as that of California, but fully as active.

Similar conditions, Mr. Schneider said, prevailed in the State of Washington. There were two active state institutions there, giving courses in pharmacy, under conditions similar to those prevailing at the Corvallis institution in Oregon. Washington likewise had a Board of Pharmacy, and he was pleased to say that under a rule of the board adopted some months ago, beginning with July, 1913, no one would be allowed to take the State Board examination unless he had completed one year's work in a college of pharmacy recognized by the board. On and after July 1, 1914, all candidates appearing before the board for license must have completed a course in a recognized college of pharmacy, and the board retained the right to say what colleges should be recognized; it was understood, however, that students from any and all colleges complying with the minimum requirements of the American Conference of Pharmaceutical Faculties would be acceptable. Mr. Schneider said he considered this a wonderful step in advance. He did not know of anything that had come to his notice that had pleased him more than that action of the State Board of Washington. It meant that the Board of Pharmacy, having become disgusted, perhaps, with the dilly-dallying of the State Association and the pharmacists of the state, had simply decided to take things into its own hands. The question now was whether this rule of the board would stand the test; so far as he knew, it did not conflict with the State law. He regarded it as really remarkable that five such men should have been brought together on one board—men having such a clear insight into what was needed in the state, with the courage at the same time to act in so important a matter.

With regard to the State Association in Washington, Mr. Schneider said he could only state that such a body existed, though not so active as the California Association. A notable feature with the latter was its earnestness of purpose. When the California Association met in annual session, "they went to bat at once; there was no horse-play and no potato-races; there was no blind-man's buff, or base-ball, or anything of that sort, but they got down to business at once, and stayed there until the very last session." The entertainments were not allowed to interfere with the business sessions. Mr. Schneider said he had a pardonable pride in the thought that he had perhaps done a little towards the reorganization and revivifying of the California pharmacists, as exemplified in the

new State Association. Continuing, he said they had in California also a branch of the American Pharmaceutical Association, tentatively organized about a year ago. Several meetings of the branch had been held, and one was being held this very night in the office of the *Pacific Pharmacist*.

Chairman Wallace said the Section had before it several papers along similar lines and it might be well to have them all discussed at the same time. The next was one by H. L. Taylor, on "The Standardization of Courses in Schools of Pharmacy." But as the writer was not present, he said the paper would be read by title and referred for publication, without objection, and it was so ordered.

The next paper was by Joseph W. England, of Pennsylvania, and was entitled, "The Misuse of the Term Pharmacology and Other Terms," and was read by the author.

The Chair then expressed the great pleasure he had in now calling on Miss Zada M. Cooper, instructor in the Iowa College of Pharmacy, and said he would call on Prof. Kuener, of that institution, to conduct Miss Cooper to the rostrum.

Mr. Kuener escorted Miss Cooper forward, amid the applause of the Section, and she presented her paper entitled, "Some Suggestions on the Teaching of Pharmaceutical Arithmetic."

The Chairman stated that it was a matter of extreme gratification to have this very interesting and instructive paper from a young lady who was one of the faculty of the Iowa College of Pharmacy, and he hoped that this would be a precedent established, by which the Section on Education and Legislation would have such papers from other Colleges of Pharmacy. Recently it had been his pleasure, he said, to present to Mrs. Charles H. LaWall, of Philadelphia, a prize for the best paper presented before the Pennsylvania Pharmaceutical Association for 1910, out of a list of thirty-nine papers presented. He said he desired to express his appreciation and sincere thanks for this paper presented by Miss Cooper.

The three foregoing papers were discussed by Messrs. H. H. Rusby and Philip Asher, after which it was ordered that the papers be received and referred to the Committee on Publication.

The Chair expressed his regret that the next paper on the program, one by Charles H. LaWall, of Philadelphia, entitled, "When is an Education not an Education?" must for lack of time be read by title.

The Chair said that the same course would be taken with a paper by William Bodeman—"The Sage of Hyde Park"—entitled "Reflections."

The Chair stated that there were two papers on the program by Lyman F. Kebler, of Washington City, but he had not as yet received either paper.

Mr. Rusby stated by way of explanation that there had been some new regulations in the Department of Agriculture, which had made it exceedingly difficult for Mr. Kebler to get away just at this time.

The Chair next called on Frank H. Freericks of Cincinnati for his paper on "A Proposed National Anti-narcotic Law," and Mr. Freericks presented his paper in abstract.

There being no discussion on this paper, it was referred for publication.

The next paper was one by L. L. Walton, on "Legislation Relating to Preliminary Education for Pharmacy Licensure." In the absence of the writer, unless

there was some objection, the Chair said he would take the liberty of reading this paper himself. They had recently had in Pennsylvania a law relating to preliminary education, and quite a little bit of confusion had been developed in relation to this question. Mr. Walton's paper had a bearing on that proposition, and he asked Miss Cooper to take the Chair while he read the paper.

Miss Cooper, as Acting-Chairman, invited discussion on the paper just read, but none was offered, and on motion it was referred for publication.

Chairman Wallace resumed the Chair, and stated that the next paper on the program was a paper by Thomas H. Potts, Secretary of the National Association of Retail Druggists, on "A Few Ideas On The Subject Of Education And Legislation " and that unless there was some objection, the paper would in the absence of the writer, be read by title and referred for publication and it was so ordered.

The Chair stated that the same course would be taken as to a paper by James H. Finneran, entitled, "Past, Present and Future Pharmacy Laws," and also as to a paper by S. L. Hilton, of Washington, on the subject of "Failure of Pharmacy Laws."

The Chair then called on Prof. H. H. Rusby to present his paper on "The Pharmacopoeia and the Law." Mr. Rusby, as a preliminary to the reading of his paper, stated that the subject to which it related was, in his opinion, one of such great importance that he was anxious to have it printed, or at least have the principal facts connected with it, printed quickly and have as wide distribution as possible. He knew that the papers which were presented here were the property of the Association, and must be printed in the Journal, but believed that all the pharmaceutical Journals were permitted to print abstracts. He had several copies of his paper, and the members of the pharmaceutical press could get them by applying to him. (See September Journal, p. 947.)

The Chair called for action upon this very excellent and exhaustive paper by Mr. Rusby, with the eleven recommendations made to the Section.

Mr. Schneider moved that the report be received and adopted, including the recommendations.

Mr. Gordon, in starting the discussion on this paper, stated that it was one of the most important that had been presented before this Section. It spoke of conditions that affected every man in the drug business. With Mr. Schneider's permission, however, he would like to offer the following as an amendment to his motion: "That this Section should receive Mr. Rusby's paper and refer it to the Council, with request that the Council upon approval forward it to the Revision Committee of the United States Pharmacopoeia, with the statement that this Association approved the recommendations made in the paper." In other words, he wished to see this Association go on record as approving these recommendations, and not only as approving them, but that they should be sent to each member of the Pharmacopoeial Revision Committee as approved by the American Pharmaceutical Association.

Mr. Schneider said he would accept the amendment.

Mr. Freericks inquired of Mr. Gordon whether he intended that the Council should first look into the recommendations made. He said that he did not under-

stand it was meant by adopting the motion and amendment as made that this Section approved of the paper and of the recommendations.

Mr. Gordon responded that he was not familiar with the approved method of doing the thing, but, as he understood, the approval of this Section went no farther than that. Therefore, he thought the motion should be to refer the paper directly to the Council—or, possibly, better to the Association in General Session, for its approval, with the recommendation that the paper be sent to the Revision Committee of the Pharmacopoeia, with the approval of this Association of its recommendations. Whichever was the better way was agreeable to him.

Charles E. Caspari said he thought if it went to the Council that body might recommend to the Association in General Session, and that it could be transmitted by the Association to the Revision Committee, with whatever recommendation it had to make.

After some further discussion of the mode of procedure in this matter, participated in by Messrs. Gordon, Schneider and Caspari, and in which the Chairman took a leading part, and after several suggestions and counter-suggestions had been made, a motion made by Mr. Beal "that the paper be received and the recommendations therein made be approved by this Section, and that the paper and recommendations be referred to the Council, with the request that the Council acquaint the members of the Pharmacopoeial Revision Committee of this action," was accepted by Mr. Gordon as a substitute for his proposed amendment, and was unanimously adopted.

Mr. Beal stated he presumed that the sending of a copy of the Journal containing the paper to each member of the Revision Committee would be a sufficient notification, and this was agreed to informally.

The Chair stated that there were two items on the program which, of necessity, had to have attention, namely: First, the nomination, and then the election, of the officers of this Section for the ensuing year. Tomorrow night had been set apart for a joint conference of the Boards of Pharmacy and the Conference of Pharmaceutical Faculties with the Section on Education and Legislation; therefore, it was necessary to attend to this business at this session. He thereupon called for nominations for Chairman.

W. J. Teeters, of Iowa, the present Secretary of the Section, was nominated for Chairman by Mr. Beal, and Mr. Rusby seconded the nomination. On motion of Mr. Freericks, nominations for Chairman were closed.

Nominations for Secretary were called for, and Mr. Beal stated that he desired to nominate for this office a man who was so modest that when his name was presented he would probably decline, but he hoped his declination would not be accepted. He was a gentleman that he hoped some day to see Chairman of the Section, as he was one of the best qualified authorities on pharmaceutical law and legislation that this Association possessed. He then nominated for Secretary of the Section for the ensuing year Frank H. Freericks, of Ohio. This nomination was seconded by Mr. Rusby and on motion the nominations were closed.

The Chair called for nominations for three associates on the Committee on Education and Legislation and Hugh Craig, of New York City was nominated by Mr. Beal and the nomination seconded by Mr. Rusby. Louis Emanuel, of Pennsylvania was nominated by Mr. Freericks, and the nomination seconded by

Mr. Beal. Miss Zada M. Cooper, of Iowa, was nominated by Mr. Gordon, and the nomination seconded by Mr. Rusby. On motion of Mr. Beal, nominations were closed.

The Chair stated that as there was only a single ticket, he would entertain a motion to direct the Secretary or Chairman to cast the affirmative ballot of the Section electing the several parties named to the positions for which they have been respectively nominated.

Mr. Beal, seconded by Mr. Rusby, moved that the Chairman cast this ballot, and the motion prevailed.

The Chairman stated that he had cast the ballot as directed, and declared those in nomination duly elected officers of the Section for the ensuing year.

The Chair then called on Mr. Beal for his paper entitled "The Best Method of Administering State Food and Drug Laws."

Mr. Beal stated that, in an unguarded moment, he had admitted to the Chairman of the Section that he had some ideas on the administration of food and drug laws. The Chairman had asked his (Mr. Beal's) advice as to the best way to get papers for the program, and he told him the way to do it was to find somebody who had an idea, and then to fasten on him and not let him go until he consented to present a paper. This advice had been his own undoing. He said that he would not read the paper, but would give a brief abstract of it. He also said that he was frank to admit that it would probably be regarded as "rank heresy"; that he did not expect the members to approve of it, and would be very much surprised if they did.

Mr. Beal then proceeded to read his paper in abstract.

The Chair invited discussion of the paper just read, and remarks were offered by Messrs. Albert Schneider and H. H. Rusby.

The Chairman said if there was no further discussion, the paper would be referred for publication, and it was so ordered.

Mr. Beal was called to the chair, while the report of the Committee on President's Address and report of the Secretary, which was referred to the same committee, was being read.

Mr. Freericks presented said report as follows:

REPORT OF COMMITTEE ON CHAIRMAN'S ADDRESS.

DENVER, COLO., Aug. 21, 1912.

To the Section on Education and Legislation of the American Pharmaceutical Association:

Your committee has carefully considered the address of Chairman Wallace, and has been much impressed with its progressive spirit and tone, reflecting the high and at the same time practical aims of true pharmacists. We urge upon every member its careful study. In giving consideration to the various suggestions and recommendations we

(1) Endorse fully the suggestion for the need of amendment to the National Food and Drugs Act, and in this connection are agreed that no amendment can be regarded as satisfactory unless it safeguard against false and fraudulent claims, and unless it also provide a single standard for official drugs and preparations, having due regard for the rights of original manufacturers and for the sale of crude drugs and chemicals and finally, unless it do not also provide, in so far as this be possible, that the manufacture and sale of all drugs, their compounds and preparations, be limited to qualified persons.

(2) We are of the opinion that the use of wood alcohol is not advisable in medicinal preparations for either internal or external use.

(3) We heartily agree that a Federal law governing the sale and distribution of habit-

forming drugs in interstate commerce is an absolute necessity, and such law, its details and methods of practical operation, should find the early attention of the proposed legislative conference.

(4) Having reference to the basic principles which should be found in every pharmacy law, we agree entirely with the suggestions made by Chairman Wallace and particularly as follows:

- a. That all laws relating to pharmacy should be enforced by pharmacists.
- b. That provision should be made for licensed stores, other than pharmacies, for communities remote from pharmacies and where there is a real necessity, to allow the sale only of drugs and medicines in original packages, when prepared by pharmacists, but this should not include the right to in such cases sell narcotics or preparations containing narcotics.
- c. We approve the suggestion to require a separate license for each pharmacy, so long as this will not preclude a person, firm or corporation from owning more than one pharmacy when conducted by registered pharmacists.
- d. We approve the suggestion that drugs administered or dispensed by physicians should be required to conform to the respective standards of strength, quality and purity.
- e. We heartily concur in the recommendation for the establishment of a National Legislative Conference, not necessarily under the auspices of the American Pharmaceutical Association but, if possible, and otherwise feasible to meet at the same time and place, with the understanding, however, that no allied branch or interest be bound by a decision which may be reached by a majority attending such conference.

Your committee has also given careful attention to the splendid and complete report made by Secretary Teeters, touching fully upon the legislative and educational progress of the year, and now recommends that the sincere thanks of this Section be expressed to him for his painstaking labor and study in that connection.

We also recommend that the thanks of this Section be expressed to Chairman Wallace, the appreciation of whose work is fully shown by this report. Respectfully submitted,

L. A. SELTZER.

F. W. MEISSNER,

W. B. DAY.

LOUIS EMANUEL.

FRANK H. FREERICKS, Chairman.

Mr. Beal, as Acting Chairman, stated that the Section had been favored at this meeting with a Chairman's address of more than usual ability and comprehensiveness, and with a Secretary's report to which he gave high praise when he said that it was equal to the report that the same gentleman made to the Section last year. He said the Section was equally favored by the report of the Committee on these two addresses, which showed evidence of very careful and serious thought and preparation. He asked for action upon the report as made.

Mr. Gordon moved that the report be accepted, and this motion was seconded by Mr. Schneider.

Mr. Wallace said he wished to say a few words in relation to two items in the report. He first thanked the committee for their generous expressions and good will in relation to the address which had been submitted. As to the subject of wood alcohol, he was fully convinced that it should be permitted in preparations for external use, and he was ready to discuss that proposition with those who differed with him. He had intended to write a paper on this particular subject, but had been unable to do so. He might be able to present one at the next meeting of the Association. As to the other matter, he believed that the only place for a National Pharmaceutical Conference to be held was under the auspices of the Section of Education and Legislation of the American Pharmaceutical Associa-

tion. It had been his privilege, and also the privilege of several members of this Section, to attend two so-called national legislative conferences, under the auspices of that great organization of retail druggists, the National Association of Retail Druggists, of which he was a loyal and active member, but he could say without fear of contradiction that nothing had been accomplished except to reach a sort of understanding to extend the spirit of cooperation to those who could not be reached otherwise. Last year, at Niagara Falls, there was an indefinite program, and this year an attempt was made to get a program, but both sessions were taken up with the report of the Committee on National Legislation, which was a matter of history, and did not touch this subject directly. He agreed with the suggestion contained in the report of the Chairman of the Committee on Legislation of the A. Ph. A. at the Boston meeting, and he thought a conference of this kind covering a period of two or three days could be had to the greatest advantage of pharmacy.

Mr. Freericks, responding to the remarks of Chairman Wallace, stated that the reference to wood alcohol and the inhibition of its use for external purposes seemed to him to be in general keeping with the prevailing opinion at the present time, and he was satisfied that the committee who had in charge the report of the Chairman, as well as all the members of the American Pharmaceutical Association, would only be too glad to have Mr. Wallace convince them that they were wrong. As to the matter of a National Legislative Conference, to be held under the auspices of this Association, Mr. Freericks said he well recalled that this matter was first broached last year at Boston, and it was then, as now, a question of having such conference under the auspices of this Association. At that time the Section, after duly considering the matter, came to the conclusion that it would not be proper for this Association to ask for such a conference, and at the same time to announce that it should be under the auspices of the A. Ph. A. For this reason, it was not approved in that form last year, and the committee this year was taking exactly the same position. They held that it did not matter under whose auspices the conference was held, just so it was held. Speaking also as a member of the National Association, he said it had been no fault of the N. A. R. D. that this conference was not held at an earlier time, and that it did not consider all the various subjects it might have considered. He wished to make this entirely clear. If the proper steps were taken now to bring about such a conference, he believed it could be held with profit to all concerned; and when held, it would be entirely able, in his opinion, to choose its officers and proceed in such way as it deemed best for the benefit of pharmacy.

Speaking again on this subject, Mr. Wallace said he thought all would agree that any conference held must be under the auspices of some particular organization. Exception was taken to holding such a conference under the auspices of the A. Ph. A., or the Section on Education and Legislation of that body. Two conferences had already been called by the N. A. R. D., which were specifically provided to be presided over by the Chairman of the Committee on Legislation of that Association, and he failed to see how any exception could justly be taken to the suggestion to transfer that authority from an appointive officer of an Association composed wholly of retail druggists to an elective officer of a Section of an Association composed of every branch of pharmacy. He insisted that

there was but one place to hold a National Pharmaceutical Legislative Conference, and that was under the auspices of the Section on Education and Legislation of the American Pharmaceutical Association, and at a time other than the time of the annual meeting.

Mr. Rusby expressed himself as heartily in favor of the views just presented by the Chairman. He thought the broader the discussion of such questions the more force it gave them. He knew that the National Association of Retail Druggists would be absolutely impartial in such a matter; but even if it had no one interest in sight more than another, people would say that it had, and any action taken would lose in weight and influence thereby. But here was an Association which included everything; there was not a single interest connected with pharmacy that was not represented, and well represented, in the A. Ph. A. He believed that a conference held under the auspices of this Association would be acceptable to everyone, and would carry great weight. All of these allied bodies could be represented in it, and there would be nothing narrow about it. No one could say there was; no one could suspect there was.

Mr. C. M. Woodruff thought that a National Legislative Conference, in which the various interests referred to in the report might be represented upon an equal basis, would be productive of much good. There were many things that all were agreed upon, but some features that were not agreed upon—though the Chairman's paper indicated the possibility of coming to an agreement upon one of the most important features. The manufacturers' association, he said, was ready to enter into such a conference. Mr. Woodruff stated that he did not think such a conference should be expected to accomplish the desired end in a moment, or perhaps in a single session. He had with him all the reports of the different committees in printed form made at the American Bar Association held in Milwaukee last week. One of these reports was that of the Commissioners on Uniform Legislation. After two or three years of conference, they had reported a uniform divorce act, and a uniform act relating to the employment of child labor. They had a report referred to it on uniform drug legislation, and their report on that subject covered about four lines, and simply amounted to a recommendation of adoption by all the States that had not yet done so of a law that was in exact compliance with the act of June 30, 1906, so far as it related to the definitions of adulteration and misbranding. His comment was, that if a body of lawyers could not arrive at a statute in one or two sessions, a body of pharmacists, representing diverse interests, could not be expected to accomplish much in such a short space of time. Mr. Woodruff said he wanted to make this suggestion, with all earnestness: It would not be long until a new Pharmacopœia and a new National Formulary were given to the country, and in his opinion, in order to make that Pharmacopœia and that National Formulary legal, it would be necessary to adopt new drug laws, for, while a Legislature might adopt an existing standard, he doubted whether a Legislature could confer legislative powers upon a body of men to create standards in the future. This would mean difficulty from the very moment the new Pharmacopœia and new Formulary took effect. His suggestion, was therefore, to consume the time from the present to the time when these new authorities should take effect in conference between the different interests, to see

if, by a spirit of compromise here and there, an agreement upon an ideal pure drug law could not be arrived at.

Mr. Rusby, as a substitute for the original motion of Mr. Gordon to receive and adopt the report of the Committee on Chairman's Address, here moved that the same be adopted, with the exception of that part which related to the proposed Conference.

Mr. Craig seconded Mr. Rusby's motion, and Acting Chairman Beal said the question was now on the amendment.

Mr. Freericks, speaking again on this subject, said that he was sure that it was with exactly the same desire and exactly the same feeling entertained by the Chairman of this Section and Mr. Rusby that he expressed exactly the contrary wish. What was wanted was practical results, not theory. It might be all very well to say that these things should be done under the auspices of this Association, but what was wanted was a Conference. In his judgment, it made no difference under the auspices of what association this Conference was held, but he wished again to assert that it had not been because of any fault on the part of either association that such a Conference had not been held in due course and at the proper time in the past. He reiterated that it was a conference that was wanted, a successful conference, and to that end all the various interests ought to be brought into it; and even if they did not agree in all things, free discussion could be had and they would learn from each other.

Mr. Wallace asked if he was not right in the statement of facts that a conference of any kind must be held under the auspices of some body or some commission, and again declared that his loyalty to the National Association of Retail Druggists was not exceeded by any member of that body. But, he said, two conferences of this character, which had been called under the auspices of that Association had not been successful. After these two failures, he said he believed it was up to some other organization to act, and he believed the recommendation made by Mr. Hynson before this Association at Boston last year would fill the bill exactly. It had been demonstrated that the National Association of Retail Druggists could not hold such conference under its auspices at the time of its annual convention, because there was not sufficient time allowed for it. He concluded by stating again that he felt that a National Legislative Conference should be called, and under the auspices of the Section on Education and Legislation of the American Pharmaceutical Association, as suggested by Mr. Hynson; and that suggestion of his he intended to incorporate in a report to the Council before they left the city of Denver.

Mr. Freericks asked if it was possible to get information at this time as to whether any request went to the National Association from this Association at its Boston meeting last year for the holding of such a conference.

Mr. Wallace said he could answer this question by saying that, in the illness of Mr. Johnson, of Seattle, Chairman of the Section on Education and Legislation last year, he was called to preside over the second session, and at that time exception had been taken by Messrs. Anderson and Freericks to the conference being held under the auspices of this Section. The matter, with that exception, was

referred to the Council for action, but no action had ever been taken on it, notwithstanding that he, as a member of the Council during the past year, had directed the attention of the Secretary of the Council to that particular resolution which had been referred for its action, and which he believed was of vital importance to pharmacy.

Mr. Freericks said that this justified him in stating what he had twice said before, that if there had been no successful conference held because of failure of action on the part of this Association, the fault should not be placed elsewhere. Therefore, he again made the point that it would be to the advantage of pharmacy generally in the country if this Section did not adopt the amendment as proposed.

The Acting Chairman said the question was still on the adoption of the amendment proposed by Mr. Rusby, and a vote would be taken thereon.

A *civis voce* vote failing to decide the matter, a division was called for, and resulted in a tie vote. The Chair being called upon to decide the matter, cast his vote in favor of the amendment and declared the same adopted.

The report as thus amended was then adopted.

Mr. Wallace resumed the chair.

On motion of Mr. Craig, seconded by Mr. Freericks, the following papers were read by title only:

"Vegetable Drugs Employed by American Physicians," John Uri Lloyd; "Food for Thought for State Boards of Pharmacy. I. Result of Examinations," Otto Raubenheimer; "The Pharmacist vs. Legislation," Fred A. Hubbard; "Pharmaceutical Degrees," Otto A. Wall; "The Relation of Drug Standardization to Pharmaceutical Education and Legislation," F. E. Stewart; "The Evolution of Laws Regulating the Sale and Use of Poisons," M. I. Wilbert; "The Need for Uniformity in Laws Regulating the Sale and Use of Poisons and Narcotics," M. I. Wilbert; "The Effect of the National Pure Food and Drugs Act On the Wholesale Drug Business," John R. Thompson; "International Cooperation in Pharmacy," J. J. Hoffman, Secretary of the "Federation Internationale Pharmaceutique."

The Chair stated that he had in his hands the report of the Committee on Patents and Trade-Marks, F. E. Stewart, Chairman, which was a very long one, and asked what disposition should be made of it.

Mr. Beal said that he had had the pleasure of reading this paper, and that it was a most excellent report. There was not time to consider it now and give it the amount of attention it deserved—it would take at least an hour's time to do that—and solely for this reason he moved that the paper be read by title and referred to the Committee on Publication. This motion was seconded by Mr. Freericks, and carried. (See September JOURNAL, p. 1034.)

The same action was also taken upon the "Report of the Committee on Weights and Measures," Geo. C. Diekman, Chairman.

On motion of Mr. Rusby, duly seconded, the Section then adjourned to meet in joint session with the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties, on Thursday evening at 8 o'clock.

THIRD SESSION—Thursday Evening, August 22, 1912.

(Joint Session with the Boards of Pharmacy and Conference of Faculties.)

The program called for a joint session of the Section on Education and Legislation with the National Association of Boards of Pharmacy and the American Conference of Pharmaceutical Faculties at this time, and the session was presided over by Chairman Wallace, who called the meeting to order at 8:30 p. m. in the ball-room of the hotel.

The Chair stated that he believed the action taken by the Section on Education and Legislation on yesterday, in referring Mr. Osseward's paper to the Council without recommendation, was an injustice to that gentleman, and he thought that portion of his paper exclusive of the subject of phylacogens, upon which he had expended so much time and labor, should be referred for publication, the action of the Section to stand as to the remainder of his paper, and he would be glad to entertain a motion to reconsider the action by which the paper was referred to the Council without recommendation.

Mr. Anderson asked if this would be possible, in a joint meeting of this kind, and the Chair responded that it was, to begin with, a session of the Section on Education and Legislation, and that a few matters of business applying particularly to the work of the Section would first be taken up and disposed of, before the work of the joint session began.

Mr. Frazier said he had listened to Mr. Osseward's paper with a great deal of interest, but did not think of making a motion to refer the first part of it for publication until it was too late. He said the Chairman had voiced his sentiments in regard to the matter, and he moved that the vote by which the paper was referred to the Council without recommendation be reconsidered.

This motion was seconded by Messrs. Day and Freericks, and the latter by way of explanation of his second said it was not a question of whether the members held the same views as the writer, but simply one of whether that part referred to by the Chair showed work and was of real value. He believed that it did, and he thought Mr. Osseward was fairly entitled to have that part of his paper referred for publication in the Proceedings.

The Chair said that he had discussed the subject with the author of the paper, and he had agreed to the proposition suggested.

The motion to reconsider the vote by which that portion of Mr. Osseward's paper outside of his discussion of phylacogens should be referred to the Council without recommendation was then put to a vote and carried.

The Chair announced that the paper was now before the Section for disposal, and he would be glad to entertain a motion that that portion of the paper preceding the author's discussion of phylacogens be referred to the Committee on Publication, and that the balance of the paper be referred to the Council without recommendation.

Mr. Shuptrine so moved, and the motion was seconded by Messrs. Frazier and Anderson and carried.

The Chair stated that the Secretary would now read the report of the Syllabus

Committee, which had come from Chairman H. L. Taylor, who was not able to be present.

REPORT OF THE NATIONAL PHARMACEUTICAL SYLLABUS COMMITTEE.

ALBANY, N. Y., July 30, 1912.

To the American Pharmaceutical Association (Section on Education and Legislation):

GENTLEMEN: Your Syllabus Committee beg to submit the following report of the activity of the National Committee for the year and to offer resolutions for your approval.

The National Committee met at Boston, Mass., August 17, 1911 and on formal motions proceeded to elect officers to approve their reports and to act upon their recommendations.

After a spirited discussion regarding the extent of the revision, the time of issue, the number of copies and the method of financing the revised edition, it was on formal motion

Voted: That the revised edition should number at least 1,000; that it should be published by the National Committee on the initiative of the Executive Committee; that its financing should be referred to the Executive Committee with power; that the Executive Committee enter at once on the task of revision for the present period and call for revised copy from the chairman of the sub-committee, October 1, 1911 manifold and distribute the copy to the members by January 1, 1912; the suggestions, amendments and corrections to reach the Executive Committee by February 1, 1912.

By the courtesy of Meyer Brothers Druggist and the Pharmaceutical Era, reprints from the December, January and February numbers appeared as leaflets, 1, 2 and 3 respectively. Leaflet 1 gives a brief account of the Pharmaceutical Syllabus and the workers engaged on its revision. Leaflet 2 describes the editions, in the type it is proposed to use in the edition, and was addressed to State Boards of Pharmacy in the United States. Leaflet 3 invited criticism, the suggestions and amendments that will make a second edition an improvement on the first, and was addressed to the Schools of Pharmacy in the United States.

The delays in printing and the difficulty of securing, by correspondence, prompt action by the sub-committees, led to the conclusion in December that the instructions of the Boston meeting could not be followed. During December, a conference of the Executive Committee was held, which resulted in affirmative action on the following resolutions:

(a) That the Secretary submit to the Committee of Twenty-one for ratification the assignment

(1) To materia medica of 400 hours in a 2-years course recommended by Chairman Rusby;

(2) To pharmacy of 400 hours in a 2-years course recommended by Chairman Beal;

(3) The additional 100 hours each in materia medica and pharmacy be elective with the faculties with alternative questions by the boards, and that the proposition of a 1200 hour syllabus be presented for approval to the three national bodies represented by the committee.

(b) That on the adoption or rejection of a, with or without amendments, the sub-committees modify copy in accord therewith and forward revised copy to the Secretary, who shall see that the revised copy with chemistry is submitted to the Committee of Twenty-one.

(c) That the Secretary prepare specifications for an edition of 1000, with provision for additional numbers by the 100; secure estimates thereon by responsible publishers; submit the same to the Executive Committee for ratification; prepare a contract for signature by the Executive Committee and publisher, and push the publication for delivery to the committee not later than July 1, 1912, contingent upon the securing of advanced orders of a total of not less than 400 copies.

(d) That the Secretary canvass the boards and schools to secure advance orders for delivery by August 1, 1912.

Under item a, the recommendations were submitted to the Committee of Twenty-one and a vote thereon is in process as this report is made. Under item b, the sub-committee on Chemistry has reported recommendations and amendments. Under item c, the Secretary has prepared specifications and they have been approved by the Executive Committee and

submitted to responsible publishers. Under item d, the Secretary canvassed the boards and schools and has received the first of July nearly 450 advanced orders.

May 17, 1912, a meeting of the Executive Committee was held in Albany; Messrs. Bradley and Anderson appearing as proxies for Messrs. Engstrom and Beal respectively. Among the twelve motions adopted at this meeting, the following are of special interest to you:

Motion 5. That 100 copies of unbound syllabuses be set aside for the use of the committee in its preparation of the third edition.

Motion 6. That in the second edition, body matter be set in uniform type and leaded.

Motion 7. That supplementary matter be set in smaller type and single spaced, with a formal explanation that such supplementary matter is not included in the 1200 hour course and consequently not to be examined upon by boards of pharmacy.

Motion 8. That it is advisable to ask the supporting associations to meet the expense of complimentary copies of the syllabus for similar bodies of other countries; the American Conference of Pharmaceutical Faculties to the schools (100 copies), the National Association of Boards of Pharmacy to the examining boards (100 copies), and the American Pharmaceutical Association to the associations (200 copies).

Pursuant to these resolutions and the rules of your Association, your committee respectfully recommend the following action:

1. That representatives on the National Committee be appointed to succeed those whose terms expire by limitation or resignation.

2. That the annual appropriation for the routine expenses of the committee be authorized.

3. That the following recommendations of the National Committee be approved:

- (a) The assignment of 400 hours in a 2 years' course to materia medica, as recommended by the chairman of that sub-committee.

- (b) The assignment of 400 hours in a 2 years' course to pharmacy, as recommended by the chairman of that sub-committee.

- (c) The additional 100 hours each in materia medica and in pharmacy be elective by the faculties with alternative questions by the boards.

- (d) The minimum 2 year course leading to the degree of Ph. G. become a 1200 hour course for the second syllabus period 1915-1920.

4. That the American Pharmaceutical Association become responsible for advanced subscriptions to the number of 200 copies of the syllabus for distribution through the Secretary of the National Committee to similar national or state associations in other countries.

Respectfully submitted,

HENRY L. TAYLOR,

Of the Executive Committee.

Mr. Asher moved to receive the report as read.

Mr. Anderson seconded the motion to receive, provided it was not a motion to adopt. He said the report showed that the revision of the Syllabus was in a very complicated state. Some progress had been made during the past year, but much remained to be done. The trouble was that no meeting of the Committee of Twenty-One had been held since the meeting last year at Boston, and an attempt had been made to revise a book of this importance—a work that was of such moment to the colleges of pharmacy, the boards of pharmacy and the pharmacies themselves—without such a meeting. He said he supposed most of the members were familiar with the result of the attempt made to do this work by correspondence between the members of the Committee of Twenty-One, and the motion made six months ago that matter for revision of the Syllabus be gotten together by the different Sections—that on chemistry, materia medica, etc.—which matter had never been put before the Committee of Twenty-One for action. Motions had been made and sent out with a voting-sheet to the members of the Committee of Twenty-One, without any opportunity for argument; and then when the members had sent in their reply or vote on a motion, an attempt had been made to declare

the motion carried, without giving any chance for amendment, vote for reference, or anything else. The whole system as practiced during the early part of the year was entirely unparliamentary, and no regard for the proper rights of the members had been shown.

For these reasons, Mr. Anderson said he did not think this report purporting to show a revision of the Syllabus was in any condition to warrant its adoption by this joint session. For illustration, one thing the members were asked to adopt was the proposition to make a 1200-hour Syllabus, instead of 1100. This proposition had never been passed on by the Committee of Twenty-One, to his knowledge, and received an affirmative vote there. Mr. Anderson said his claim was, that this matter was of such great importance that final action on the revision of the Syllabus should be had at a regularly called meeting of the Committee of Twenty-One, convened expressly for that purpose, and that nothing that was to go into the Syllabus should be declared adopted until the committee had acted on it in actual session. If this course was not followed, he believed the revised Syllabus would be just as unsatisfactory, and subject to the same criticism, as the present work. In conclusion, Mr. Anderson said he had been informed that it was the intention of some of those concerned in this work of revision to submit the newly revised Syllabus at this meeting of the American Pharmaceutical Association and ask its ratification, without taking the trouble to say what it contained, but simply have the Association accept it when finished, without question. He did not think that this was justice either to the organizations working in the interest of a revised Syllabus, or to the Syllabus Committee. For the reasons given, he offered the following:

Resolved, That it is the sense of the joint meeting of the Section on Education and Legislation with the Conference of Teaching Faculties and the National Association of Boards of Pharmacy that, while much of the preliminary matter in reference to the Pharmaceutical Syllabus can be arranged by correspondence, final action on all matter which will constitute the revised edition shall be taken at a meeting or meetings of the Syllabus Committee called for that purpose.

Mr. Anderson explained that this was the same resolution he had offered in the Conference of Teaching Faculties in regard to the same report.

This resolution was seconded by Mr. Shuptrine and carried.

The Chair asked the Secretary to read a communication which had been received from Otto Raubenheimer.

The Secretary then read the following:

FOOD FOR THOUGHT FOR STATE BOARDS OF PHARMACY.

OTTO RAUBENHEIMER,
Brooklyn, N. Y.

I. RESULT OF EXAMINATIONS.

The writer, a former member of a State Board of Pharmacy, does not wish to tread upon the corns of any special board, but merely gives his personal ideas in a series of papers on different subjects, and he hopes that the same will provide food for thought for some of our state boards, and that this food will be properly digested and will generate energy and not result in apathy or indifference.

The subject of my first paper is

RESULT OF EXAMINATIONS.

1. Above all, I beg to point out that the examination questions of all State Boards of Pharmacy should be published. These questions should become public property and should

not be kept secret. They are for the information of the students, candidates, teachers and pharmacists in general. I am greatly surprised, in fact amazed, to learn that the pharmacy boards of Kansas, Kentucky, Michigan, Vermont and Utah *refuse* to publish their examination questions.

2. The secretary of each State Board of Pharmacy should also publish the number of candidates taking each examination, the number who pass successfully and the number who fail.

3. The names of those who pass should be published in justice to the successful candidates.

4. Furthermore, it should be the duty of the State Boards of Pharmacy to prepare *annual statistics* showing the number of candidates who are college graduates, together with the names of the colleges, and also the number who passed and the number who failed from each college.

These statistics should be given for each examination and for the entire year, too, and have the object of showing how the graduates of each college pass the board examination. Such tabulated statistics would have a great influence on pharmaceutical colleges, which at present are perhaps unaware of the weakness of their teaching, by showing them how frequently their graduates fail. As no college would like to remain at the bottom of such a published list, this would bring about marked improvements in the equipment of the colleges, in securing better teachers and adopting better and more up-to-date methods of teaching. Such information, therefore, would be of very great value to the students, the candidates, the pharmacists, the colleges, the state boards, the educational department, and the public in general.

5. These statistics of all the state board examinations in the United States should be collected and tabulated for the entire year by the Section of Education of the A. Ph. A. or a committee appointed for this purpose, and should be presented at the annual meeting and should be published in the *Journal*.

Undoubtedly a great deal of interest would be taken in this novel feature of pharmaceutical examination statistics. As a model along these lines, the writer begs to point out the *Yearly State Board Statistics* presented by the Council of Medical Education of the American Medical Association.

The writer, whose unselfish interest in professional pharmacy is undoubtedly known, has at present no connection with a college or a board of pharmacy, and therefore being impartial, has taken it upon himself to bring forth this subject, even at the risk of being criticised.

The Chair stated that, without objection, the communication would be received.

Mr. Freericks stated that he had with him a number of resolutions which had been adopted at the Milwaukee meeting of the National Association of Retail Druggists, all touching upon the subject of legislation, and many of them of vital importance. So far as he was informed, neither this Association nor any of its Sections had as yet taken any action in reference to any matters of this kind, and if in order he would like to present these resolutions, and, if possible, have action upon them this evening. He explained that the resolutions were on many different subjects, and he thought it would be well to read each one separately. The first was:

Resolved, That alypin be added to the list of drugs recommended by our conference committee to be specified upon the label of preparations containing the same.

Mr. Freericks said he hardly needed to say anything by way of explanation, as it was a requirement of the Food and Drugs Act to show the content of certain drugs in preparations containing them. The question was whether the Section wanted to go on record as including alypin in this list of drugs.

The Chair stated that without objection the resolution offered would stand approved, and it was so ordered.

Mr. Freericks then read the following:

Resolved, That we disapprove and use our efforts to defeat the Owen bill in its present form.

On motion of Mr. Anderson, seconded by Mr. Richardson, this resolution was carried.

Mr. Freericks then read the following:

Resolved, That where physicians are allowed to dispense, the same law should regulate the practice as does the law concerning the pharmacist, especially in reference to narcotic and habit-forming drugs.

Mr. Asher moved to adopt, and the motion was seconded by Mr. Shuptrine and carried.

Mr. Freericks then read the following:

WHEREAS, The future and continued existence of retail merchants throughout the country depends upon a change of the Sherman anti-trust act, which will allow the smaller business interests to cooperate against the growing evil on the part of a few to monopolize entire branches of the retail trade; and

WHEREAS, The Honorable Mr. Clapp, senator from the state of Minnesota, has introduced in the senate of the United States, senate bill 7017, providing for supplementary legislation to the Sherman act, which will permit the smaller interests, inclusive of the smaller merchants and laboring people, to cooperate with each other, without being in violation of the Sherman act, such legislation being by us deemed imperative for the future prosperity of our country; therefore, be it

Resolved, That we heartily endorse and approve senate bill No. 7017 as introduced by Senator Clapp of Minnesota.

Resolved, That a copy of these resolutions be sent to Senator Clapp.

Mr. Asher, seconded by Mr. Richardson, moved the adoption of the resolutions as read.

At this point, Mr. Caspari, Jr., said it had occurred to him that these resolutions should go either to the Association in general session or to the newly-appointed House of Delegates, which had been formed for the very purpose of considering resolutions and bringing them before the Association at its final session for action. He did not think this joint session was competent to adopt these resolutions and offer them as the action of the American Pharmaceutical Association.

The Chair expressed dissent from this view, and held that it was entirely competent for this Section to vote upon the resolutions offered, as there was nothing in the By-Laws requiring that they be referred to the House of Delegates.

Mr. Chas. Caspari, Jr., appealed from the decision of the Chair, and Mr. Asher made the point of order that the Chair could not properly preside while the vote on such an appeal was being taken, but the Chair held that the point was not well taken.

A vote by division was taken on the appeal from the decision of the Chair, with the result that the Chair was overruled by a vote of eighteen against to twelve for the decision. Thereupon, the Chair announced that, his decision having been overruled, the resolutions would have to go to the House of Delegates for action.

Mr. Chas. Caspari, Jr., explained that he did not wish to have his action in

appealing from a decision of the Chair misunderstood; that his object was simply to have the resolutions take their proper course. He was present when the subject of a House of Delegates was proposed in the Council, resulting in the adoption of a set of resolutions on the subject, afterwards ratified by the Association in general session, and by the adoption of which a House of Delegates had been formed, one of the chief objects of which, as stated, was to take charge of all resolutions presented, and put them in shape for the action of the Association. This was the reason of his motion.

Mr. Freericks said he thought it was only proper that the Section on Education and Legislation should at least hear the resolutions coming from the N. A. R. D., even though they were referred to the House of Delegates. Mr. Caspari, Jr., and Chairman Wallace both indicated their acquiescence in this view.

Thereupon Mr. Freericks read the following:

WHEREAS, At a conference of the legislative committee of the N. A. R. D. and the A. Ph. A., held at Washington, certain well-founded objections to the proposed Richardson bill were pointed out and changes therein demanded, resulting finally in the drafting of a bill by said committee, which appears in the hearings before the committee on interstate and foreign commerce, House of Representatives, Sixty-second Congress, second session, Part II, page 433.

WHEREAS, The said bill as drafted by the conference, aims to effectively reach wrongful practices in the sale and distribution of drugs and medicines, preventing fraud upon the public and restricting the manufacture and sale of many dangerous drugs and their compounds to qualified persons, at the same time being eminently fair to all interests concerned; therefore, be it

Resolved, That we heartily endorse the changes in the Richardson bill recommended at said conference, as they appear in the hearings referred to herein, and as so changed, we advocate the enactment thereof as a measure which will be of immense benefit to the welfare of the public.

Resolved, That this Association favors an amendment to the pure food and drugs act that will protect the public against unwarranted claims of nostrums, and will provide that the manufacturing of medicinal preparations be in the hands of licensed pharmacists.

Resolved, That this Association favors interstate anti-narcotic legislation that will prohibit all illegitimate traffic in narcotics and habit-forming drugs and confine their sales to proper channels and uses to strictly medicinal purposes.

WHEREAS, Section 7 of the food and drugs act permits the sale of U. S. P. and N. F. preparations of various strengths, providing such strength is designated on the label and,

WHEREAS, Such provision causes much confusion in the enforcement of pharmacy laws providing for the use of U. S. P. and N. F. names on the drugs of standard strength alone,

Resolved, That this section should be repealed or so amended as to provide that all drugs sold to the public under their official names or recognized synonyms, shall be of standard strength.

Mr. Freericks said this ended the list of resolutions to be presented to this Section by the delegates of the N. A. R. D. He expressed his entire approval of the course decided upon by the Section with reference to the resolutions offered, as they involved subjects that in many instances needed consideration.

The Chair stated that these resolutions would all be referred to the House of Delegates, unless there was objection.

Mr. Anderson announced a meeting of the House of Delegates for 8 o'clock tomorrow (Friday) night. He said the only way it could consider these resolutions was to have another meeting.

The Chair asked if the National Association of Boards of Pharmacy or the Conference of Pharmaceutical Faculties had anything to bring before the joint session now.

Mr. Day suggested that it might be well to call on one of the gentlemen representing the National Association of Boards of Pharmacy to make a statement as to what the boards had accomplished. As he understood the matter, this was the idea of having a joint session this afternoon, to bring up matters of common interest. He thought Mr. Sala, as Secretary of the Association of Boards of Pharmacy, ought to be able to enlighten the joint session on the work of the board.

Mr. Sala modestly suggested that Mr. Wm. Mittelbach, the new president of the Boards of Pharmacy, was present, and could do that better than he could.

Mr. Mittelbach said he was hardly sufficiently posted upon the work of the Boards of Pharmacy to give a complete synopsis of their work, as he was not present all of the time. However, he said the boards had been very busy, and had accomplished a lot of work. Most of their time had been given to the problem of registration. As he understood, they had been invited to this joint session with the understanding that matters would be brought up here that might affect the boards in which they would be interested.

Mr. H. C. Shuptrine said that one proposition which occupied a good deal of the time of the boards, and one which received the most earnest consideration was, not so much the question of reciprocity *per se* as between the boards of different States, but that of the higher education of the applicant for registration—that stress was particularly laid upon the absolute necessity of higher education. During the discussion of reciprocity, that one point was very prominently featured, and, speaking for himself, and not for the National Association of Boards, he expressed the conviction that a uniform standard of educational requirements was the one real solution of the reciprocal movement. It could not be hoped to have the licentiate of one State go into another State and receive in exchange for his certificate the certificate of that State until there was a uniform standard of educational requirement for all the States. "You can talk and discuss and theorize on the elevation of pharmacy all you wish," said Mr. Shuptrine, "but in my opinion you can never hope to raise pharmacy to the elevation to which it justly belongs until we ourselves establish an educational requirement that will put us there. In other words, we can never hope to take a boy, however deserving, from between the plow-handles, give him six months' experience at the soda-water fountain, six months at a quiz-school, then give him a certificate to practice pharmacy, and by this means expect to raise pharmacy to the standard to which it justly belongs."

"We can never hope to raise the standard of pharmacy, until we fix it so that he who has not the proper education will not be able to pass the examination and be licensed to practice pharmacy. We need cooperation, and I feel satisfied in speaking as I have that I voice the sentiments of the large majority of the delegates to this meeting of the National Association of Boards of Pharmacy.

Mr. Cornelius Osseward said that, as the representative of the State of Washington, he had been sent to Denver for the purpose of obtaining all the information possible pertaining to the working of the National Association of Boards of Pharmacy. He had listened to the deliberations of that body, and had become convinced that a prerequisite law setting a standard of education was the only solu-

tion of the problem of an interchange of certificates between the States. A recommendation had been made by the Committee on Legislation that a National Committee be appointed to formulate questions to be sent out to each Board of Pharmacy throughout the United States, each board to take its examinations, and the answers to be sent back to the National Committee, this committee to issue a National certificate, so-called, which would hold good in every State of the Union. The State of Washington accepted none but graduates now, and if the proposed standard was established his State would be glad to co-operate and recognize such certificates of interchange. Under the present conditions, his State would refuse to recognize any man coming in from another State who was not a college graduate, but if this standard was established they would accept anyone that held a certificate issued by the National Committee. He believed this movement was a step in the right direction, and would prove an incentive to young men to seek a higher education.

Mr. Jones, of South Dakota, suggested that as the Secretary of the National Association of Boards of Pharmacy was not now present, and as ex-President Walker of that body was also absent, it might be well to call on Mr. Dodds, of Illinois, who was present at all the sessions, to give a concise statement of the work done by the Associated Boards. He said he would make this as a motion.

This motion was seconded by Mr. Clark and carried.

Mr. Dodds responded to this call, and said that as to the business that was done, the most important, as he understood it, was the question of reciprocal registration between the States. A resolution had been adopted providing, in substance, that reciprocal certificates should be interchanged between the different boards that were members of the National Association, where the boards could do it under their laws; and that each applicant for a reciprocal certificate should pay to the National Association the sum of \$5. This sum would go to the National Association, in addition to the reciprocal fee which was required by each of the States. For illustration, if the reciprocal fee in Missouri was \$10, the applicant would have to pay that \$10 into the Missouri Board treasury, and in addition pay \$5 into the National Association treasury. This \$5 fee, it was estimated, would create a fund of approximately \$1,500 a year.

Another resolution that was adopted provided for the election by the National Boards of what was to be known as an Advisory Examining Committee, but, unfortunately, the Associated Boards had adjourned without electing that committee, and the matter would have to go over until next year. The impression had gotten out that this committee would be appointed by the Executive Committee, but this was not correct; the resolution provided for the appointment of the committee by the Associated Boards. The resolution further provided that, of the members of the committee, one should be well versed in pharmacy examinations, another well versed in chemistry examinations, and that the third should be well versed in materia medica examinations. It provided, further, that the members of the committee should be taken, one from the Western States, one from the Central and Southern States, and one from the Eastern States. The member from the Western States was to visit the different boards of pharmacy in an advisory capacity, see the work they were doing, observe carefully the papers prepared for examinations, and offer suggestions where, in his judgment, they were needed; the idea being

to get the examinations in the Western section of the country as nearly uniform as possible. The same thing would be true of the Central section, to make the examinations there as nearly uniform as possible; and the same thing would be true of the Eastern section. The resolution further provided that the expenses of the members of this Advisory Committee should be paid out of the fund created by the \$5 fees paid to the National Board.

In addition to these things, Mr. Dodds said a great many reports were adopted, and the Executive Committee would, during the ensuing year, formulate and draft a new constitution and by-laws, to be presented at the next annual meeting.

Continuing, Mr. Dodds said he would like to allude briefly to the subject touched on by Mr. Shuptrine in regard to higher education. In Illinois, he said, a college diploma was not necessary at the present time as a prerequisite for taking the examination for registered pharmacist. Under their law, while they could give credit for it, it was not essential. There was a great deal of discussion at the time that feature was incorporated in the law as to what was a recognized College of Pharmacy. Some of the States used the word "reputable" college, but the State of Illinois used the word "recognized." It was difficult for five members of a Board of Pharmacy, who were not entirely familiar with the colleges, their courses of study, the hours required, their laboratory equipment, and the character of professors engaged in these schools, to determine what was a recognized school or college of pharmacy. They got around that question in Illinois by adopting as recognized schools or colleges of pharmacy only such schools or colleges as complied with the requirements of the Conference of Pharmaceutical Faculties.

Another movement that was on foot in Illinois, Mr. Dodds said, was to enact a law that would hereafter require all applicants for examination as registered pharmacists to be graduates of a recognized school or college of pharmacy. That matter had been discussed for a number of years at the annual meetings of the Illinois Pharmaceutical Association. They had gone on record as recommending that feature at meetings in the past, but at the next succeeding session they would rescind that action, while at still another session they would adopt it again. It was a case of "on again, off again." Finally, to have something definite done in the matter, the Chairman of the Legislative Committee got out a voting-card, and sent it out to the 5,700 registered pharmacists in good standing in the State of Illinois, asking the point-blank question, "Do you favor the enactment of such and such a law, or do you disapprove of it?" and the result was that the vote was four to one in favor of the requirement of a college diploma as a prerequisite to the taking of the examination for registered pharmacist. So at the next session of their Legislature, which would be in January of next year, a bill would be prepared and introduced requiring that hereafter every applicant for examination in the State of Illinois must have a diploma showing his graduation from a recognized school or college of pharmacy. If this bill became a law, with the understanding they already had that a recognized school or college of pharmacy was such as was recognized by the Conference of Pharmaceutical Faculties, he believed they would have about as good a law as it was possible to have.

The Chair asked Mr. Dodds if he understood him to say that the National Boards of Pharmacy had provided that a fee of \$5 should be payable to the National Boards for an interchange certificate, and Mr. Dodds replied that the pro-

vision was that the applicant for a reciprocal certificate must pay \$5 into the treasury of the National Association.

The Chair and Mr. Dodds continued this discussion at some length, the Chair taking the broad position that where a State statute required that a certain fee be paid by the applicant for an interchange certificate the National Boards of Pharmacy could adopt no rule in conflict with that which would stand the test of the courts, and Mr. Dodds holding to the view that not only was the National Association of Boards not subject to State law, but that, in the exercise of that discretion which was necessarily inherent in it, it could refuse to grant such certificate until the required fee was paid, besides which, however, he was satisfied that no objection would be raised to the rule by those making the application, for the fee was small and the benefits too great to the recipient of such certificate to justify the assumption that he would raise an objection thereto.

Mr. A. H. Clark, of Chicago, said the discussion between the Chairman and Mr. Dodds reminded him of the old story of the man who had been put in jail for a certain offense, and who, when his lawyer told him that he could not be put in jail for that offense, replied, "Well, I am here anyhow." So the practical question in this matter was, if the National Board got the money for issuing these reciprocal certificates, it did not make much difference about the finer points that were raised. Proceeding, Mr. Clark said he had the honor of being President of the Conference of Pharmaceutical Faculties, but on his own responsibility, and not as a representative of the Conference, he wanted to say that he was very glad to hear the expression of opinion here from the National Association of Boards of Pharmacy regarding its position on making college education a prerequisite for examination. Of course he, as well as every other member of the Conference of Faculties, was heartily in accord with this sentiment. The Conference of Faculties was working very industriously along these lines. They had had before them during the last two or three days a large number of resolutions bearing on this very subject of increasing the entrance requirements, graduation requirements, etc., and the tendency was to increase these. To do so, he said, would undoubtedly place pharmaceutical education upon a much higher plane than it had been in the past. The Conference had increased the number of hours which constituted the course. They had also considered a number of changes in their courses, such as increasing the high school requirement. Likewise, they had considered the question of raising the standard for other departments, and had a committee appointed on this subject. Next year, he had no doubt, a great deal more would be accomplished in the line of advancing the requirements. As a member of the Conference of Pharmaceutical Faculties, he could pledge the cooperation of the entire Conference with the Boards of Pharmacy in their efforts to secure higher education and better conditions, and a closer cooperation between the pharmaceutical faculties and the Boards of Pharmacy. This was what the Conference of Faculties wanted. Some of the boards claimed they could not have a prerequisite requirement, because the schools were not up to the standard. The schools, on the other hand, claimed that they could not get up the standard, because the boards would not require anything higher. There was a cross-fire here, and it was a subject upon which cooperation was needed more than anything else.

Mr. H. C. Washburn, of Colorado, said he wanted to speak briefly on this ques-

tion of defining what should constitute a recognized school or college of pharmacy. He did not know that a better definition could be given than that the gentleman from Illinois had given. So far as he was aware, there never was a law enacted that did not do an injustice to somebody. The situation that the Department of Pharmacy in the University of Colorado found itself in was an illustration of the injustice that might be worked by a law or rule good enough in itself. The school of pharmacy in the University had only been established one year, and no such school in the United States had a higher requirement for entrance or graduation; yet, under the rules of the American Conference of Pharmaceutical Faculties, that school would not be eligible to apply for membership in the Conference for four years to come; and, therefore, it would not be a recognized college of pharmacy for four years to come, notwithstanding that it had the highest requirements in the United States. Mr. Washburn said he was not a member of the American Conference of Pharmaceutical Faculties, but he desired to bring this matter up here, in the hope that the Conference would find some way to adjust this situation.

Mr. Wallace said that, for a number of years, he had felt that he knew a little about matters relating to pharmaceutical legislation, from having made a study of such laws; and he desired to say that the interchange of certificates between states having the same requirements was a matter of vital importance at this time, and one which everyone interested in pharmaceutical legislation agreed should be enacted. From the information he had been able to gather, all such laws required that a specific fee should be paid by the applicant to the board of pharmacy. In some cases that fee was \$15, and he knew of one case of proposed legislation where such fee was placed at \$25. In order to get an exchange or reciprocity in certificates, it was necessary for the General Assemblies of these states to enact a law providing for this particular thing, and in that enactment they must stipulate the fee to be paid for this interchange of certificates; and any action taken in the matter by the National Boards of Pharmacy would be absolutely worthless. The statute enacted by a commonwealth would be supreme in that particular state, and would control in such matters.

Mr. Dodds' reply to this was, that the Illinois law specifically provided for an interchange, but did not say whether the fee should be five cents, five dollars or twenty-five dollars.

Mr. Shuptrine said he was not a lawyer and was not familiar with interstate laws, but had been told that law was a matter of reason. In that view it seemed to him that the National Association of Boards of Pharmacy would have the same right to charge \$5 for a national certificate that the national government had to go into any particular state and say that that state had to pay for the privilege of selling a certain commodity. The state would have no right to say to the United States that it could not make that charge. While he was not comparing the National Boards of Pharmacy with the United States Government, it seemed to him that the principle involved in the two cases was identical, for this question affected every state in the Union. As to the proposition to charge a fee of \$5, Mr. Shuptrine asked if all were in favor of it, who would question it. He was sure the Chairman would not question it, because he was in favor of it, and the American Pharmaceutical Association had gone on record as favoring a prerequisite law and reciprocal registration. The Conference of Faculties was also

in favor of it, and he could not see where the opposition was to come from. Any man who wanted this National Boards certificate would have no hesitation in paying the \$5-fee, and he would have no patience with the man who opposed it, whether it was legal or illegal. He could not see how anybody could object to it, and he did not believe any objection would be made. Many of the states provided a fee for examination, but most of them had no statutory provision as to an interstate exchange of certificates. His position was that the National Boards could charge \$200 for such a certificate, if they wanted to, although the charge for examination in the first place might only be \$15. This was a movement for the elevation of pharmacy, and was one that the American Pharmaceutical Association, the National Association of Retail Druggists, the Conference of Pharmaceutical Faculties, and everybody else who was interested in the welfare of pharmacy, had at heart.

Mr. Clark said this reminded him of the situation in Illinois. A lot of druggists in Illinois thought that their pharmacy law was unconstitutional, but they paid their dollar every year just the same. He knew some lawyers of the highest standing who insisted that the National Pure Food and Drugs Act was unconstitutional, but the government was nevertheless enforcing it and making everybody toe the mark.

Mr. Freericks indicated his support of the position taken by Chairman Wallace on this question, and thought the Boards of Pharmacy should be very careful not to take any action not warranted by law. Personally, he was anxious that the National Boards of Pharmacy should have the necessary means for its work, but he thought the principle involved here was of importance to the Boards. While it was true that one desiring to obtain such an interchange certificate would not "kick" when he applied for it, after he got it, it might be a different matter, and he thought the boards of pharmacy of the respective states should bear in mind that they were accountable somewhere and some time for their acts, and if they lent themselves to a scheme for the exaction of a fee for which there was no warrant in law, a proceeding could be filed against the offending board, and it was only too well known that there were many who stood ready to file such charges. In his judgment, a board could not successfully defend itself against the charge of exacting, directly or indirectly, a fee for the support of a national organization, where the laws of the state did not provide for such, and they would invite a great deal of undesirable notoriety by attempting to do so, as no doubt the newspapers would entirely misconstrue the action taken.

Mr. Day asked Mr. Freericks if he thought these charges would be filed under the Sherman Act, and Mr. Freericks replied in the negative. But, he said, assuming an applicant had complied with the demand for payment of the fee of \$5 in order to secure an interchange certificate, after he had secured that certificate he could file in any proper court a *quo warranto* proceeding against the Board of Pharmacy, claiming that this sum had been exacted from him unlawfully, and the board would have to defend itself against the charge.

Mr. Dodds asked Mr. Freericks whether, in his judgment, it would be legal for the boards of pharmacy in the several states to contribute to the support of the National Association of Boards. Mr. Freericks replied to this that quite a

different proposition was presented here, if the state statute allowed some discretion in reference to the matter. But where such statute declared that an applicant having the proper qualifications to practice pharmacy should be granted an interchange certificate upon the payment of a certain fee, no board could refuse him a certificate unless he agreed to pay an extra fee of \$5 for the support of an institution outside of the state board.

Mr. Shuptrine said he had learned "early in the game" not to argue with a lawyer, unless he had the lawyer on his side. So he would not attempt to argue with Mr. Freericks on the legal phase of this matter. He had raised this same point, he said, in the convention of the National Association of Boards of Pharmacy. This was not a selfish move, but a cooperative move, where everybody received a certain amount of benefit, and everybody at all interested in pharmacy should be vitally interested in it. For these reasons they had decided that it was a pretty good thing. And then, too, it would help to get the United States Government to establish a national board. This movement was bound to result in something definite, sooner or later, and if it could not be accomplished through the cooperation of the Conference of Faculties, perhaps it could be done by making the requirement that an applicant for such certificate could not obtain it, unless he was qualified to practice in every state—which was, after all, what was wanted.

Mr. Anderson said he thought the Section on Education and Legislation and the Conference of Teaching Faculties would have to "take off their hats" to the National Association of Boards of Pharmacy. As had been said by one of the members, the Conference of Faculties would have to "wake up," in order to keep pace with the National Boards. Many times it had been said that retail pharmacists were not good business men, but here was presented the spectacle of nearly every member of the National Boards, who are also retail pharmacists, coming to this meeting and talking over this matter of interchange of certificates. They gave their ideas, and said "Yes, that is a good plan; we can do it—collect \$5 for the National Association for each certificate issued. But is it legal?" Then these business men proceeded to forget about electing their Advisory Examining Committee, and thus laid the matter over one year. Then they came here and made a report, received applause on the floor and got their legal advice for nothing.

Mr. Williams, of Wisconsin, said that in his state they assumed the authority to charge a larger fee for a reciprocal certificate than the examination fee, and he thought this was the case in the larger number of states at the present time. The law of Wisconsin provided that a fee must be paid by the applicant when he took the examination, and the Board took that as authority to charge a larger fee for a reciprocal certificate. Mr. Freericks' comment on this was, that if there was nothing in the law that specified what that fee should be he thought the board would have the discretion to say what should be charged for an interchange certificate issued to somebody applying from another state, and there would be no objection to having this in the charge.

Mr. Charles Caspari, Jr., said he did not think it was well to prolong this discussion as to the legality of the \$5-fee in question, and he would not say a word about it. But he did wish to say a few words in regard to the report coming

from the National Association of Boards of Pharmacy, in regard to the step they were about to take as to an advance in preliminary educational requirements before admitting applicants to examination. He thought this was one of the most auspicious movements in the history of the times. The statement had frequently been made that some of the boards paid too little attention to the subject of preliminary education when they came to consider the qualifications of applicants. A great many members of the National Association of the Boards of Pharmacy were aware of the fact that for some years past the American Conference of Pharmaceutical Faculties had had a requirement of admission to a school of pharmacy equivalent to at least one year of high-school work. That showed what the Conference had done up to the present time. Of course, it was not possible to advance or increase these requirements very rapidly, as in such evolutions as this the progress was necessarily slow. A great deal had been done already along this line, and in the next few years he was satisfied a great deal more would be accomplished. If the National Association of Boards of Pharmacy would come up a little higher and meet the Conference in the position it had taken, he thought a great point would be gained. As to prerequisite laws which demanded of an applicant for registration that he should be a graduate of a school of pharmacy, reputable or otherwise, he thought that was a question that would have to be settled by the courts, just as in the case of medical practitioners. Up to the present time, the question of the legality of a prerequisite law had never been tested in the courts. It had been suggested, but had never been brought up to any appellate court of a state, and never to the Supreme Court of the United States. In his opinion, such a law was unconstitutional, for it could make no difference where a man got his education, so long as he had it. He did not think the boards of pharmacy could make that requirement. This was simply his personal view. Mr. Caspari said it might look strange for a teacher in a school of pharmacy to make such an announcement, but it was in keeping with his views. Prerequisite laws in the states where they had been passed had operated well, and had done a great deal of good—simply because nobody had attacked them. But the question was, What would become of such a law when the Supreme Court of the United States took hold of it?

Mr. Albert Schneider asked why they should be attacked, and Mr. Caspari replied, "To test their legality." It was easier to comply with the requirements of a certain law than to spend \$500 to carry it to the State Appellate Court, or probably to the Supreme Court of the United States. His position was, that it made no difference where a man got his education, provided he had it when he applied for examination. The board would have the right to put the most searching questions to the applicant of course, but if he stood the test he had complied with the law.

In answer to a further question by Mr. Schneider as to where such education could be better had than in a well-equipped college of pharmacy, specially prepared to impart such knowledge, Mr. Caspari replied that there were other ways of getting it, though he granted that the easiest and best way was through a college of pharmacy, which he was heartily in favor of, and always had been—and naturally so, as he was a graduate of a school of pharmacy, and had turned out many graduates in his life. But the members knew very well, for instance, that

a man could become proficient in analytical chemistry without going to a university. All he had to do was to put himself in the hands of a competent instructor and he would become one.

Mr. Williams asked Mr. Shuptrine if a registered pharmacist in Pennsylvania, say, could take his certificate and be registered in the state of Georgia. Mr. Shuptrine replied that he could if he had made a general average of 75 per cent. on examination. Mr. Williams suggested that this would not be an interchange of certificates. An interchange of certificates was an interchange without examination. Amplifying his statement, Mr. Shuptrine said that where a man holding a certificate from the Board in Pennsylvania submitted that to the Georgia Board of Pharmacy, along with the statement that he had made a general average of 75 per cent. on his examination before the Pennsylvania Board, he would be given a Georgia certificate on the payment of \$15 in advance. Their state law did not authorize such an interchange, but, like Mr. Clark's story of the man who was in jail whether they could put him there or not, they did it.

Mr. John Culley said the Utah statute provided that the Board might, in its discretion, grant registration to such persons as passed a satisfactory examination, on the payment of a fee of \$25; and if the Board, in the exercise of its discretionary power, decreed that the applicant for registration must apply for registration upon blanks furnished by the National Boards, and not otherwise, in order to secure registration, if the National Boards wanted to charge \$5 for that certificate they could do it, and he thought it would be a legal charge.

Mr. Anderson here took occasion to suggest that this was a joint meeting of three bodies, the Section on Education and Legislation, of the A. Ph. A., the National Association of Boards of Pharmacy and the American Conference of Teaching Faculties, and before any definite conclusion could be arrived at in this matter, or it was decided just what should be done or approved, it would be necessary for the members to get together, and not be divided among themselves.

The Acting Chairman asked if there was any further discussion on this subject, but none was offered.

Thereupon Mr. Wallace resumed the chair, and asked if there was any further business to bring before this joint session.

Mr. W. B. Day said there was another interesting matter that had not been mentioned, and he thought perhaps the members of the Boards of Pharmacy would be glad to know about it. Sometimes the charge had been made in a friendly way, that the Conference of Faculties was too exclusive. At the present time, he believed, there were 32 out of the 81 schools in the country that were members of the Conference—three new schools having been recently added. He thought all were agreed that it was important that a school should have been maintained for five years before admission to the Conference. When the proper time came, he had no doubt but that the Colorado school—which, so far as he could learn, was a very excellent one—would be admitted. He thought the Conference had a right to see how a school was going to get along, how it would be governed, what faculty it would have, and what equipment it would provide—and perhaps what support it would receive from the pharmacists of the state in which located—before that school should be admitted to the Conference. It was much easier to admit than it was to get rid of members. This was a wise pre-

caution, therefore, and he hoped that Mr. Washburn would not feel that the Colorado College was being discriminated against, because this rule applied to all schools alike.

Mr. Asher said that no doubt if the prerequisite law carried, although the Colorado College could not yet become a member of the Conference of Pharmaceutical Faculties, owing to the limited time it had been in existence, the Boards would provide a means for interchange, if that question came up.

The Chair asked if there was any further business to bring before this joint session, but there was no response.

The Chair thereupon stated that the installation of officers of the Section on Education and Legislation was now in order, and appointed Mr. Shuptrine, of Georgia, a committee of one to bring forward the Chairman-elect, Mr. Teeters, of Iowa for installation.

Mr. Shuptrine said in introducing Mr. Teeters that he was reminded of the story of the stump speaker who, on one occasion, undertook to introduce Andrew Jackson to an audience, and dwelt upon his qualifications for office to such an extent that a fellow with whom patience had ceased to be a virtue, exclaimed, "We all know Andy Jackson, but who are you?" He felt that the new Chairman of the Section was much better known to its members than he was, and needed no endorsement from him. All pharmaceutical progress, and everything pertaining thereto, hinged on education, and he was sure there was no one more capable of presiding over the deliberations of this Section in an educational way than the gentleman who had been chosen as Chairman for the ensuing year.

Mr. Teeters, in acknowledging the honor conferred upon him, said that the first thing he wished to do was to congratulate the retiring Chairman, Mr. Wallace, upon his excellent address and the large number of excellent papers that had been presented before the Section this year. His own speech, he said, would come at the next meeting, and he could only hope that he might in a measure be able to make the work of the Section as successful as it had been during the past year.

Chairman Wallace expressed the extreme pleasure he had in introducing into the high office of Chairman such a man as Mr. Teeters. He felt that the work of the Section would go right on, and expressed the earnest hope that it would exceed that done under his predecessors. In turning over to Mr. Teeters the gavel as the emblem of his office, he said he did so with the sincere wish that he would never have occasion to use it in quieting a tumultuous assemblage.

Mr. Teeters took the chair, and called for Mr. Freericks, Secretary-elect, but he was not in the room. Likewise, Associate Louis Emanuel, of Pennsylvania, was not present.

The Chair then called upon Mr. Chas. Caspari, Jr., to escort to the platform Miss Zada M. Cooper, of Iowa, one of the new Associates on the Committee.

Mr. Caspari gallantly performed this duty, and introduced Miss Cooper to the members.

Mr. Wallace could not resist this opportunity to pay tribute to the fair sex, and stated that Miss Cooper's election as Associate on the Committee was distinctly the reward of merit. One of the greatest gratifications he had had during the past year, in his capacity of Chairman, was in being able to place upon the pro-

gram a paper from a lady pharmacist, an instructor in a college of pharmacy. He expressed the hope that this prompt recognition of the merits of the paper presented by Miss Cooper would stimulate others of the gentler sex to contribute, for certainly this paper had proven that the ladies were fully as capable as the men of making contributions of real merit to the work of the Section.

Miss Cooper briefly expressed her sense of the honor conferred upon her by her election as one of the Associates on the Committee, and said she would be glad to do all in her power to further the work of the Section.

Mr. Shuptrine then brought forward Mr. Craig, of New York, and introduced him as one of the Associates on the Committee who was able to speak for himself. Mr. Craig, being a modest man, was inclined to repudiate this suggestion, and said that he had been overlooked by the Chairman. He thought perhaps the reason he had been overlooked was because he had been too quiet. It had been his disposition to get up and talk upon the \$5-fee proposition, recently under discussion, because he always liked to discuss financial (!) matters. He assured the members that they would not have another chance to overlook him, because, if he had the good fortune to be present next year as Associate, they would certainly hear from him.

The Chair asked if there was any further business to come before the Section, but none was offered. Thereupon, on motion of Mr. Anderson, seconded by Mr. Sass, the Section, in joint session with the National Boards and the Conference of Faculties, adjourned *sine die*.

THE MISUSE OF THE TERM PHARMACOLOGY AND OTHER TERMS

JOSEPH W. ENGLAND.

Times change, and the meanings of words change with them. There is a growth and development in words just as there is in the sciences and arts. Words which had a certain meaning yesterday have come, through human progress, to have a different meaning today. Especially is this true of technical and chemical terms, which, with the development of the sciences and arts, broaden in meaning, or become more limited in meaning, or, sometimes, lose their original meaning entirely.

It is for this reason that the definition of such terms in the usual dictionaries do not give their full and true meanings as understood by technical and scientific workers.

"The term fermentation was first applied to the fermentative process which leads to the formation of alcohol, the knowledge of which goes back to very remote antiquity. The name fermentation probably arose from the copious evolution of gas which accompanies the production of the spirit, and which gives the liquid in which it is taking place the appearance of a gentle ebullition." (J. Reynolds Green.)

Today the term fermentation is applied to any enzymic change, or any change

whereby complex organic material is resolved into simpler substances through the intervention of ferments.

Alcohol once meant only grain or ethyl alcohol; now it is applied to many other hydroxides of organic radicles.

Aldehyde formerly meant only acetic aldehyde; now it is applied to many primary products of oxidation of primary alcohols.

Take, also, the use or misuse of the term drug, a word the exact origin of which is obscure; but the most reasonable explanation is that it has been derived from a root meaning "to dry," because the term was applied only to plants, plant parts, and plant products, many of which had to be dried before they could be used. Today, the term is employed in a much broader sense. It is applied to any substance, whether of animal, vegetable or chemical origin, capable of preventing, relieving or curing disease; or, to express the term more tersely, a drug is any substance having medicinal properties.

The term medicine was formerly applied to chemical compounds only, and later was used interchangeably with the word drug, but such use is rapidly becoming obsolete. The term is broadening in meaning to embrace, not only the "science of the treatment of disease," but also, collectively, all the sciences and arts of the modern medical world.

It is pleasing to note that the national and state food and drugs acts of this country use the term drug correctly, that is, as indicating all kinds of remedial substances, whatever their origin, and their preparation.

For these reasons, the writer believes that it would be advisable to change the title of the "Committee on Unofficial Standards for Drugs, Chemical Products and Pharmaceutical Preparations of the American Pharmaceutical Association" to that of "Committee on Standards for Unofficial Drugs."

With reference to certain familiar terms, John Attfield writes that:

"Persons who practice the art and science of chemistry are known as chemists. Some two hundred or more years ago, and before chemistry was a science, the 'chemists' were the makers or vendors of chemicals, then only used as medicines. They were the successors of the alchemists. In Great Britain, these chemists and the herbalists, otherwise drug-grocers, otherwise druggists, gradually associated to form the 'chemists and druggists.' Between the 'chemist and druggist' and the physician, there existed the apothecary—the putter together of medicines or compounder of physicians' prescriptions. The apothecary has since become a medical practitioner, prescriptions now being 'made up' by the chemist and druggist. The whole class is often spoken of as that of pharmacists or pharmaceutists, terms also used in the United States."

There are other terms used in the pharmaceutical world which have changed in meaning. Thus, Henry Kraemer writes that, "Pharmacognosy, according to its Greek root, means a knowledge of drugs, but according to modern usage, it means the study of the structure and chemical constituents of crude drugs"; and even this definition—modern as it is—will probably broaden to mean, not only the study of the structure and constituents of crude drugs, but also, the art of identifying, selecting and preserving them.

Probably the most striking misuse of a technical word today is that of pharmacology. This term, according to its Greek derivation, means medicine and dis-

course, or, as Dorland expresses it, "the sum of knowledge regarding medicines"; but, according to modern usage, pharmacology means only the study of the action of drugs upon healthy living tissues, or pharmacodynamics; in contradistinction to the study of the action of drugs upon diseased living tissues, or therapeutics. The first study is based largely on physiological chemistry, and the second on pathological chemistry.

Probably the most comprehensive definition of pharmacology is that of Torald Sollmann, as follows:

"Pharmacology, in its modern meaning, treats of the action of chemical substances on living tissue—of the changes produced in the structure, composition, and function of living bodies by unorganized chemically acting substances not belonging to their natural environment. Pharmacology, therefore, goes a step further than what used to be called physiological action, in that it aims to furnish the explanation for the changes observed."

That this definition of pharmacology is the accepted view of the medical profession in this country today is shown by the fact that the American Medical Association uses the title "Section of Pharmacology and Therapeutics," for one of its most important sections.

The term pharmacology does *not* mean the sum of knowledge concerning drugs, nor does it represent all the pharmaceutical sciences, as might be thought by its manner of use in the New York state pharmacy law. If the term ever had such a comprehensive meaning, outside of the dictionaries, it has certainly lost it, and today stands for pharmacodynamics only. The term is used, erroneously, also, by the National Association of Pharmacologists, a national association of drug clerks. But such misuse will probably be corrected.

It is pleasing to note that the term pharmacy is rapidly broadening in meaning. As used today, it embraces all the sciences and the art of pharmacy, just as the term medicine, today, embraces all the sciences and the arts of medicine. The meaning of pharmacy is not limited to "the study of the preparation and dispensing of drugs and medicines," but means much more.

As Reynold Webb Wilcox stated, "Pharmacy covers a field of nearly as much importance, breadth and difficulty as that of medicine itself, and requires a special, extensive, and thorough preparation."

Briefly, pharmacy is the science of drugs and the art of preparing them for use; or, as Joseph P. Remington more fully defines the term: "Pharmacy is the science which treats of medicinal substances. It comprehends, not only a knowledge of medicines and the art of preparing and dispensing them, but also, their identification, selection, preservation, combination and analysis."

By this, it will be seen that pharmacy is the most important branch of study in the curricula of pharmaceutical schools, embracing all the sciences, as well as the art, covered by all forms of drug knowledge.

The use of the term pharmacology to replace the well established term pharmacy will result in confusion, provoke endless criticism, substitute a longer word for a shorter one, and the advocates of the change have produced no reasons which are adequately conclusive to warrant the great inconvenience and loss which would be entailed by continuing the wrong use of the term pharmacology.

A word with reference to *materia medica*. According to modern usage, this term means that study of the natural history of drugs not covered by pharmacognosy, or, in other words, the study of the commercial history of drugs, a most necessary branch of pharmaceutical science. It may be that *materia medica* will become, ultimately a division of pharmacognosy, in the form of practical or applied pharmacognosy, in contradistinction to theoretical pharmacognosy as now embraced in the main term, but this is a matter the future only can determine.

DISCUSSION.

Dr. H. H. Rusby said he was very much pleased and interested to have Mr. England present his subject so thoroughly. It was true, as the writer had stated, that the correct use of the term "pharmacology" included the whole subject of the knowledge of drugs. The present restricted use of the word, he said, represented one of the most striking illustrations of the misuse of a scientific term. He said that Mr. England correctly so stated, although he did not think he intended to do so. He could give one illustration which was still more striking: About two generations ago the term "natural history" was used to mean the history of nature, including geology and botany as well as zoology. An English writer lived about that time, who knew a great deal about zoology, but little about the rest of natural history, and he concluded that anything he didn't know wasn't worth knowing; therefore, he said, "I will apply the term 'natural history' to zoology." For a generation that use, or mis-use, of the term "natural history" held, as all the members knew. But scientific accuracy would bring the use of a term to its proper meaning, "if it took ten generations to do it," and today if a man wrote a book on zoology and called it a book on natural history he would be thrown down. Dr. Rusby said he might not live to see it, but with the utmost confidence he predicted that the term "pharmacology" would come back to its original use, when a certain group of men whose vanity was greater than their sense of loyalty to scientific accuracy had passed away.

Continuing, Dr. Rusby said he wanted to tell the members about some other things that this same group of men held to. One of them said that the Pharmacopoeia should only contain four drugs, and from that they went up to twenty-two; twenty-two was the largest number he had known any of them to admit ought to be in the Pharmacopoeia. They also said that both *materia medica* and therapeutics should be left out of the medical curriculum,—and they were left out today, he believed, from the University of Pennsylvania's medical course. He said he might be mistaken about this, but he had been so informed. He knew they recommended leaving out *materia medica* and therapeutics from the medical course, to train physicians to cure sick people, and confined themselves wholly to experiments on animals, which they called "pharmacology." Dr. Rusby said that if all the mathematicians of the world would say that four times five were nineteen, he would never believe it. It made no difference to him how many people agreed, "We will say it is this way," it would never phase him in the least. For a time, as long as such were in control, they might succeed, but things would right themselves in the end. He simply looked to the great future, and he knew that everything inaccurate was just as certain to pass away as were the people of this earth when their day was done.

Section on Practical Pharmacy and Dispensing

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE SECTION ON PRACTICAL PHARMACY AND DISPENSING.

FIRST SESSION—Wednesday Afternoon, August, 21, 1912.

The session was called to order in the ball room of the Brown Palace Hotel, at 3:30 p. m., by Chairman P. H. Utech, of Pennsylvania, who stated that the Secretary, J. Leon Lascoff, of New York, was unavoidably absent, and for that reason the Council had designated F. W. Nitardy, of Denver, to act as Secretary of the Section.

Mr. Nitardy was requested to preside while the Chairman read his address. (See September JOURNAL, p. 954.)

Action was called for on the address of the Chairman, and Mr. Eberle moved that it be accepted and referred for publication, as there were no specific recommendations made. This motion was seconded by Mr. Mollet.

Mr. W. A. Puckner said he would like to make one comment on the paper: It had been pointed out that it would be most desirable to have the Council on Pharmacy and Chemistry of the American Medical Association also investigate the therapeutic value of remedies. He wanted to say that the Council was doing that today. The preparations submitted to the Council were very rarely found to be untrue to chemical claims, but very often untrue to therapeutic claims, and a large part of the work of the Council was devoted to just that investigation.

Mr. Eberle's motion was put to a vote and carried.

Mr. Utech resumed the chair, and stated that, before taking up the discussion of papers, he would like to make the explanation for the benefit of some of those who had never been at the meeting, that all were invited to take free part in the discussions, and if there was any point in any of the papers which was not quite clear, to feel privileged to ask questions, as it had been the experience of the Association in the past that the benefits brought about were frequently more from the discussions than from the papers.

At request of the Chair, a paper entitled "A Uniform Extract of Cudbear" was presented by H. V. Army, of New York, who, during the reading of his paper, exhibited numerous samples of the extracts and tinctures described.

The Chairman stated that, before taking up the discussion of Mr. Army's paper, he would ask Mr. Nitardy to read a short paper by Alexander Gardner, of Brooklyn, entitled "Persionin—The Red Color Principle of Cudbear."

These papers on cudbear were discussed by Messrs. Asher, Sayre, Cook, Nitardy, Becker and Army, and referred for publication.

The Chair called on S. K. Sass, of Chicago, to read a paper entitled "Some

Slight Changes Which Lead to Perfection"—a paper proposing certain changes in U. S. P. preparations.

During the presentation of his paper, Mr. Sass exhibited some samples of the elixirs described. The paper was received and referred for publication. (See November JOURNAL, p. 1251.)

Mr. L. A. Seltzer here called attention to the custom of appointing a Nominating Committee at this time, to give the committee time to consider and report, and moved that same be now appointed. This motion was seconded by Mr. Army and carried. Chairman Utech thereupon appointed the following: Messrs. L. A. Seltzer, of Detroit; A. V. Pease, of Nebraska, and Louis Emanuel, of Pittsburg.

Theodore J. Bradley, of Boston, at request of the Chair, presented a paper entitled "What Is Adulteration?"

This paper excited a good deal of interest, particularly as to the definition of the word "adulteration" proposed, viz: that "a substance is adulterated when it differs in any respect from the strength, quality or purity which has been defined by some competent authority," and after discussion by Messrs. Puckner, Lichthardt, Sayre, Clayton and Gordon, a motion made by C. A. Mayo that this definition be recommended for consideration of the Committee on Resolutions of the House of Delegates, was adopted.

The Chair called on the Secretary to read, in the absence of the writer, a paper by Otto Raubenheimer, of Brooklyn, entitled "Larkspur Lotion." This, he said, was contrary to the rule, but he thought the importance of the paper and the work the author had done for pharmacy justified it.

The paper was not discussed, and was referred for publication. (See October JOURNAL, p. 1138.)

Mr. Seltzer, Chairman of the Committee on Nominations, reported that his committee recommended the following for officers of the Section for the ensuing year:

For Chairman—J. Leon Lascoff, of New York.

For Secretary—F. W. Nitardy, of Denver.

For Associate—C. Osseward, of Seattle.

On motion of Mr. Wallace, duly seconded, the Secretary was directed to cast the affirmative ballot of the Section electing these gentlemen to the positions indicated.

Mr. Sayre, of Kansas, made an oral presentation of the subject of "Massa Ferri Carbonatis," assigned him on the program.

This paper was discussed by Messrs. Army, Gordon, Puckner, Lichthardt and the author, and referred for publication.

F. W. Nitardy, of Denver, made a verbal presentation of the subject of "Improved Pharmacy Methods and Devices," for which he was listed on the program, and exhibited and showed the manner of operation of a lime-water apparatus successfully used by him.

This paper was discussed by Messrs. Mayo, Army, Gordon, Cook, Becker, Culley, Anderson, Osseward and the author, and referred for publication.

On motion of Mr. Mayo, the Section then adjourned to Thursday afternoon.

SECOND SESSION—Thursday Afternoon, August 22, 1912.

The Section was called to order by Chairman Utech at 4 p. m., in the ball-room of the hotel.

Acting Secretary Nitardy, at request of the Chair, read the minutes of the first session, which, on motion of Mr. Main, seconded by Mr. Osseward, were adopted as read.

Referring to the question of ampules, discussed in connection with the paper presented by Mr. Nitardy, of Denver, at the first session, the Chairman invited Mr. Mayo to read a communication he had received bearing on this subject.

A paper by Franklin M. Apple, of Philadelphia, on "Dispensing Hints," was, in the absence of the writer, read by the Secretary and referred for publication. (See November JOURNAL, p. 1253.)

Albro Newton, of Boston, read a paper entitled "Perplexing Pills."

After a brief discussion of this paper by Mr. Mayo and the author, it was received and referred for publication. (See October JOURNAL, p. 1139.)

The next paper called for was one on "Improper Containers," by B. L. Murray, of New York, and was presented by the writer.

After some supplementary remarks by the author, this paper was discussed by Messrs. Mayo, Jones, Blakeslee, Mortenson, Osseward and the Chairman, and referred for publication.

The next paper called for was one on "Prescription Pricing," by C. Osseward, of Seattle, which was presented orally and informally by the author, who explained that he had not had time to prepare a written paper.

This paper was discussed by Messrs. Nitardy, Sass, Jones, the Chairman and the author, and referred for publication.

S. K. Sass, of Chicago, presented a paper on "Cataplasma Kaolini."

The paper was briefly discussed by Messrs. Mayo, Jones, and the writer, and referred to take the usual course.

Mr. Mayo, at request of the Chair, read a paper on "Camphor Liniment," by Otto Raubenheimer, the Chair reiterating his statement of yesterday that any contribution by Mr. Raubenheimer was too valuable to be read by title only.

The paper was briefly discussed by Messrs. Jones, and the Chairman, and referred for publication.

The Secretary, at request of the Chair, and in the absence of the writer, read a paper by William R. White, of Nashville, entitled "Some Pharmaceutical Notes."

This paper was discussed by Messrs. Nitardy, Osseward, Jones, Eberle, Sass and the Chairman, and referred for publication.

The following papers were read by title only, in the absence of the writers:

"Oil of Eucalyptus Globulus and the Solubility Test."—E. G. Binz, Los Angeles, Calif.

"Making Fresh Emulsions."—W. H. Glover, Lawrence, Mass.

"The Trend of Practical Pharmacy"—J. Roemer, White Plains, N. Y.

"Pharmacy in Its Higher Development"—F. I. Lackenbach, San Francisco, Cal. (See September JOURNAL, p. 959.)

This concluded the papers for presentation before the Section, and the Chairman expressed his thanks to all who had rendered him assistance during the past year. He then turned the gavel over to Mr. Nitardy, Secretary-elect, in the absence of Mr. Lascoff, Chairman-elect, of New York.

On motion of Mr. Mayo, the thanks of the Section were extended its retiring officers for their efficient services and the high grade of papers presented at this meeting.

Mr. Nitardy, the newly-elected Secretary, expressed his thanks for the honor conferred, as did also Mr. Osseward, the new Associate on the Committee.

On motion, the Section then adjourned *sine die*.

NOTE ON THE MAKING OF FRESH EMULSIONS.

W. H. GLOVER, LAWRENCE, MASS.

Some years ago I made up my mind to try and build up a trade in fresh made emulsions in my prescription department, believing that if physicians could be shown freshly prepared samples, and the patients be informed that the emulsion is made fresh for them it would result profitably. It started out at first rather slowly, but by persistence our work soon began to show results, and the next problem was to find time to make the emulsions as ordered, as to make large quantities ahead would soon destroy our claim of freshly prepared. This I did by taking a desk fan, removing the propeller blades and attaching a short rod on a reducing gear, and on the lower end of the rod a cross-bar, with ends curved up so as to fit any ordinary mortar.

The gum and oil are mixed in mortar, put under the fan motor, until the primary is formed, then gradually adding balance of formula. The motor gives it a good thorough mixing and allows the operator to work at something else until the emulsion is ready. In former years I rarely had a prescription for an emulsion, but now, even in summer, it is seldom a day is passed that I do not put up one or more.

I state these facts to show what can be done if one really pushes a certain line.

Section on Commercial Interests

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE SECTION ON COMMERCIAL INTERESTS.

FIRST SESSION—Tuesday Afternoon, August 20, 1912.

The first session of the Section on Commercial Interests was called to order at 3:30 p. m., in room 811 of the hotel, by Chairman Ernest Berger, of Tampa, Fla.

The Chairman announced as the first order of business the reading of the Chairman's address, and W. C. Anderson, of Brooklyn, was asked to preside while that was being done. (See September JOURNAL, p. 968.)

The acting Chairman called attention to the fact that there are two or three sections in the address that were tantamount to recommendations, and should be considered as such.

Mr. Charles Gietner, seconded by Mr. Claus, moved to receive and refer to a special committee of three, and the motion prevailed. Thereupon, the acting Chairman appointed Messrs. Charles Gietner, Otto F. Claus and Charles R. Sherman as a Committee on Chairman's Address.

Mr. Berger resumed the chair, and stated that the first paper on the program was one by A. V. Pease, of Fairbury, Nebr., entitled "Retail Advertising." Mr. Pease presented his paper.

The Chair stated that, before taking any action on this excellent paper, there was another paper entitled "The Personal Element in Advertising," by John R. Thompson, of Pittsburg, and it might be well to read this paper and discuss both at the same time, if Mr. Pease did not object.

Mr. Pease indicated that this would be entirely satisfactory to him, and the Chairman stated that inasmuch as Mr. Thompson was not present he would ask Mr. Craig, of New York, to read the paper, which he did. (See November JOURNAL, p. 1255.)

The Chair invited discussion on these splendid papers on advertising, and Mr. B. P. Philip, of California, led off, being followed by C. R. Sherman, A. V. Pease, W. C. Anderson, G. C. Kendall, and the Chairman.

On motion of Mr. Anderson, seconded by Mr. Kendall, the papers were referred for publication.

A paper entitled "Cooperation," by Wilhelm Bodemann, of Chicago, was, at request of the Chair, read by Mr. Lichthardt, in the absence of the writer.

The paper was discussed by Messrs. Lichthardt and Anderson, and, on motion of Chas. Gietner, Missouri, seconded by R. H. Lehman, New York, was referred for publication.

A paper by Frank E. Mortenson, of Pueblo, Colo., entitled "Some Every-Day Problems," was read by the author.

The paper was discussed by Messrs. Chas. Holzhauer, G. C. Kendall, C. J. Clayton, W. B. Philip and W. H. McCutcheon. On motion, the paper was then received and referred for publication.

"Capitalizing Individuality" was the title of a paper by Secretary Hugh Craig, which was presented by the author.

This paper was briefly discussed by F. W. Meissner and the Chairman, and, on motion of Otto Claus, received and referred for publication. (See November JOURNAL, p. 1256.)

At request of the Chair, the Secretary, in the absence of the writer, presented a paper by B. E. Pritchard, of Pittsburg, entitled "Are You Alive?" (See October JOURNAL, p. 1141.)

There was no discussion of this paper, and, on motion of Mr. Claus, seconded by Mr. Anderson, it was received and referred for publication.

Secretary Craig, at request of the Chair, read a paper by Wilhelm Bodemann, who was not present, bearing the title, "Don't Be Afraid of Your Shadow."

The paper was briefly commented upon by F. W. Meissner, and, on motion of W. J. Frazier, duly seconded, was received and referred for publication.

The Chair announced that this concluded the reading of papers on the program, and, on motion of Otto Claus, the Section adjourned to meet Thursday morning at 10 o'clock.

SECOND SESSION—Thursday Morning, August 22, 1912.

The second session of the Section on Commercial Interests was called to order by Chairman Berger at 11 o'clock a. m. in room 801 of the hotel.

On motion of C. J. Clayton, seconded by F. W. Nitardy and carried, the Chairman appointed the following members to constitute the Committee on Nomination for officers of the Section for the ensuing year: C. J. Clayton, Colorado; Hugh Craig, New York, and B. P. Philips, California.

On motion of Mr. Clayton, seconded by Mr. Nitardy and carried, the Chairman at this time called on Otto F. Claus to present the report of the Committee on Chairman's Address, which was as follows:

REPORT OF THE COMMITTEE ON CHAIRMAN'S ADDRESS OF THE SECTION ON COMMERCIAL INTERESTS.

We second the strong endorsement given in this address to cooperative manufacturing and distribution by the retail druggist, but would, at the same time, suggest that while it is the manifest duty of the stockholder and retailer to in every way in his power assist loyally in the sale and distribution of any article furnished by any company with which he is affiliated as agent and stockholder, it is also the imperative duty of such corporation or company to use the greatest skill and vigilance at its command to the end that no article shall be furnished to any agent that is not of the highest quality in all respects, so that credit may attach to said dealer or agent by the sale of such article.

The committee also approves the recommendation that a reasonable sum be set aside from the general fund of our Association for this purpose, leaving the same to the Council as to the amount required.

OTTO F. CLAUS, Chairman.
CHAS. R. SIJERMAN.
CHAS. GIETNER.

On motion of Mr. Nitardy, seconded by Mr. Clayton, the report of the committee was unanimously adopted.

The Chair called for new business, or any suggestions from members of subjects for further discussion, whereupon Mr. Pease suggested as a subject for discussion at the next meeting "Cooperative Buying, Selling and Manufacturing," and Mr. Blakeslee suggested "Causes of the Commercial Trend in Pharmacy."

On motion of Mr. Clayton, seconded by Mr. Pease, the Section adjourned to 1:30 o'clock p. m.

ADJOURNED SECOND SESSION—Thursday Afternoon, August 22, 1912.

Chairman Berger called the session to order at 2 o'clock p. m., and called upon Mr. Sholtz for a discussion of the subjects "Cooperative Buying, Selling, and Manufacturing," and "Causes of the Commercial Trend in Pharmacy," which had been suggested and agreed on at the morning's session.

Mr. Sholtz responded to the invitation of the Chair at considerable length, and was followed by Messrs. L. J. Blakeslee, H. C. Washburn, F. W. Nitardy, C. Osseward, C. J. Clayton, A. V. Pease, G. C. Kendall, W. A. Dick, H. H. Whitteley, B. P. Philips, M. Noll, G. M. Andrews, J. C. Burton, H. M. Faser, L. C. Godbold, and W. C. Anderson.

An invitation to adjourn and attend the session of the House of Delegates was communicated by J. C. Wallace, Pennsylvania. This was opposed by A. V. Pease, Nebraska, and, on motion by F. W. Nitardy, Colorado, seconded by Louis Emanuel, Pennsylvania, and amended by C. J. Clayton, Colorado, the Section extended its thanks to the House of Delegates for the invitation, which it was found necessary to decline, on account of the pressure of business.

The Secretary read a motion submitted by Wilhelm Bodemann, Illinois, having to do with the distribution of samples of nostrums.

Hugh Craig, New York, moved that this be referred to the House of Delegates. O. F. Claus, Missouri, offered an amendment that it be referred to the general session. W. H. McCutcheon, Oklahoma, moved to table the resolution. None of these motions being seconded, M. Noll, Kansas, made a motion that it be referred to the general session. This was seconded by O. F. Claus, Missouri, and duly carried.

C. J. Clayton, reporting for the Nominating Committee, offered the following nominees: Chairman, A. V. Pease, Nebraska; Secretary, W. R. White, Tennessee; Associates, H. C. Shuptrine, Georgia; G. C. Kendall, Mississippi, and W. H. McCutcheon, Oklahoma.

On motion by O. F. Claus, Missouri, seconded by M. Noll, Kansas, the report was accepted. On motion of C. J. Clayton, Colorado, seconded by M. Noll, Kansas, the Secretary cast one affirmative ballot for the several nominees, and the Chairman declared them duly elected.

On motion of W. C. Anderson, New York, seconded by C. J. Clayton, Colorado, the reading of the minutes was dispensed with.

The matter of having printed papers with abstracts in the program for the

sessions of the Section was discussed by Messrs. Noll, Craig, McCutcheon, and Pease.

Escorted by O. F. Claus, Missouri, the newly-elected Chairman, A. V. Pease, and Associate W. H. McCutcheon (the only officers-elect present at the time) were duly installed.

On motion of M. Noll, Kansas, seconded by C. J. Clayton, Colorado, the Section adjourned *sine die*.

APPLIED COOPERATION.

WILHELM BODEMANN, CHICAGO.

Cooperation is an old scheme; Webster found it on the list when he got out his dictionary in 1840, but applied to pharmacy, it cannot be denied that the N. A. R. D. is the mother and nurse of what is now known as the Age of Cooperation. Some of these concerns are a very boon, some a decided curse to pharmacy. Since it is not denied that the patent medicine traffic is a bane, nay a curse to pharmacy, any concern increasing this curse cannot but be injurious to pharmacy. My hope for better things is based on a cooperation between the two great national bodies, the A. Ph. A. and the N. A. R. D. May the N. A. R. D. help to commercialize the professional, and the A. Ph. A. reciprocate by throwing a shower of professionalism into the commercialist. An unsuccessful professional is a pitiable farce, and a danger, for with the unsuccessful goes limited capital, and a shortage in the exchequer is a mighty slippery path for the honest and conscientious. On the other hand an unprofessional commercialist is a menace and a disgrace. It is true we cannot all be scientific, but we can at least be honest. We need not be four-flushers. Let the two great bodies join hands and start a propagandum for honesty and for self respect. If the successful commercialist kicks about the decrease of prescription business, how can he expect a physician to patronize him, if this commercialist has flashy signs and ads about the "Great Liver and Bladder Regulator," his "Unfailable Cough Cure" and his "Peerless Bowel Panacea?" How can an honest man recommend his cough cure when he is unable to diagnose the cause of the cough, which can be due to tuberculosis, alcoholism or nervous derangement? How damnably wrong is it to traffic in life and health by stringing along a sufferer on a worthless bowel regulator, when perchance the knife is the only resort to save a life? If a patent medicine factory wanted to diagnose, how can it be done if a batch of nostrums is dished out regardless of the specific case? How can an individual pharmacist recommend such rot, when he doesn't know any more about the disease, except perhaps than that diphtheritis and hemorrhoids are located in different geographical sections of the anatomy.

Our cooperative thinkers have launched a number of beneficial schemes, saving the druggist in insurance expense, and in purchasing staples, and in manufacturing pharmaceal products, and in securing quality prices and ownership of

brands of cigars, as you may be aware has been done by the Bergermaster of Cigars.

In the Cigar Cooperative Company we have a guarantee of quality, and a price protected selling arrangement, giving the stockholders a margin in first-class goods and reasonable retail prices, which they never dared to dream of before. If our honorable Chairman were not at the same time the Bergermaster of Tampa, I would go into a regular boost, but the iron hand of the aforesaid Bergermaster precludes this.

Now let the aforesaid thinkers get busy, and advise ways and means to, at least, arrest the flood of new disgraceful abortions of pharmaceutical activities if not completely crush the curse of the age, the quack nostrum crime.

If we expect favors at court we must come with clean hands into court, and not have the stain of blood and untold misery on our hands and conscience. If a man decides to be a crook let him hang out a shingle to that effect, and I will respect him along side the man who is a crook under the guise and cloak of a Sunday School leader and the outward trademark of a moral uplifter. By the Eternal! there is honesty even among thieves, and when I say thieves, I mean it, and not use the word in the pickwickian sense so often heard at late political conventions! Let us have a cooperative marriage of the great A. Ph. A. to the great N. A. R. D. and may this union be blessed with a progeny of an abundance of healthy children, and both of these married to the good old fashioned doctrine of honesty and decency.

"FOR SWEET CHARITY'S SAKE."

There is a case in the Paris police courts just now, the defendants in which had worked, with some success, a trade in pharmaceutical preparations under the specious and dangerous disguise of advertising "for sweet charity's sake" or "from pure charity" to indicate certain cures for various maladies. The idea is by no means new, but the methods followed showed some ingenuity. A certain M. Clouet, who was formerly in the horse-trade, opened consulting rooms in the Rue de la Harpe, Paris, and secured the services of a physician and also of a pharmacien, M. Pierre by name, who were announced as "specially attached to the establishment." The idea was to seek a connection among devout people, and with this object in view two ex-priests were engaged at a monthly salary to lend their aid. Advertisements were then published and circulars distributed under the names of the priests from an address in the Rue du Temple, offering to supply means of relieving maladies from pure charity, etc. The priests had suitable letter-paper stamped with a figure of the Virgin Mary and the title "Society of the Great Pilgrimages of France." A voluminous correspondence was the result of this little scheme, and the ex-men of the church had only to reply to their correspondents to apply to the "great medical authority" at the Rue de la Harpe, who would prescribe the valuable pharmaceutical inventions of M. Pierre, Pharmacien of the First Class. It would appear, however, that the geese which were laying the golden eggs were exploited a little too much, as complaints were made to the police, and now the five men engaged in the nefarious trade are being prosecuted for illegal practice of medicine and pharmacy.—*The Chemist and Druggist*.

Section on Historical Pharmacy

Papers Presented at the Sixtieth Annual Convention

MINUTES OF THE SECTION ON HISTORICAL INTERESTS.

FIRST SESSION—Thursday Evening, August 22, 1912.

The first session of the Section on Historical Interests was called to order at 8:40 o'clock p. m. in room 801 of the hotel by Caswell A. Mayo, who stated that he had been appointed by the Council to act as Chairman in the absence of Mr. Raubenheimer, and that Frederick T. Gordon had been likewise appointed to act as Secretary.

Acting Chairman Mayo then read the address of Chairman Raubenheimer (See October JOURNAL, p. 1145), and called for action therein, stating that there were ten recommendations contained in it and it would probably be in order that these be referred to a committee for consideration and report at the next session.

C. J. Clayton moved that such committee be appointed, which motion was seconded by F. C. Godbold, and carried.

The Chair appointed Messrs. C. J. Clayton, F. W. Meissner and F. C. Godbold as a committee to report at the next session, on the recommendations contained in the Chairman's address.

As the next order of business, Acting Chairman Mayo read the report of the Historian, also the resignation of Doctor Kremers as Historian, and stated that unless there was some objection the report would be received and take the usual course. It was so ordered.

The Chair stated that the recommendation in the Historian's address that his successor be made an officer of the Council and be given remuneration, or its equivalent in the matter of his expenses in attending the meeting, would, unless there was objection, be referred to the Committee on Chairman's Address. After a brief discussion by Messrs. L. E. Sayre, F. T. Gordon, F. W. Meissner and the Chair, on motion of Mr. Meissner the recommendations of the Historian were referred to the Council without recommendation, also the resignation of the Historian, with the regrets of the Section that this should be necessary on his part.

The Chair next called upon Secretary Gordon to read a paper entitled "Reminiscences of Pharmacy in the Rockies," by Mr. John Best.

Mr. Gordon proceeded to read the paper which he stated he himself had written upon information given him by Mr. Best, and that Mr. Best would probably desire to look it over before it was published.

The Chair stated that if there were no remarks upon the paper it would take the usual course and be referred for publication.

As the next order of business the Chair called upon C. J. Clayton for a paper

entitled "A Contribution to the History of the Colorado Pharmaceutical Association."

Mr. Clayton read his paper.

The Chair said if there was no discussion the paper would be referred to take the usual course.

The Chairman next called upon Prof. L. E. Sayre for his paper on "The Early History of Pharmacy in Kansas." Prof. Sayre presented his paper in abstract, which, upon the invitation of the Chair, was discussed by Messrs. Sayre and Meissner.

The Chair stated that if there were no further comments on the paper it would take the usual course and be referred for publication.

The next paper called for was one entitled "The Naval Apothecary Since the Civil War," by F. T. Gordon, and was read by the author.

There was no discussion of this paper and it was referred for publication.

The Chair stated that the next item on the program was a symposium on the telephone, consisting of the following series of papers:

"The Druggist and the Telephone—A Contribution to the History of the Introduction and Use of the Telephone in the Drug Store, A Symposium," D. J. Reese, Philadelphia, Pa.; F. C. Godbold, New Orleans, La.; W. H. Lamont, St. Louis, Mo.; C. A. Mayo, New York, N. Y.; C. E. Marshall, Boston, Mass.; B. E. Pritchard, Pittsburgh, Pa.; J. O. Burge, Nashville, Tenn.; Joseph Jacobs, Atlanta, Ga.

There being no discussion, the papers were referred to take the usual course.

Upon invitation of the Chair, General Secretary Beal exhibited to the members two contributions to the Historical Section presented by Mr. Bodemann, one being a diploma from the Harvey Medical College, conferring the honorary degree of Doctor of Medicine on Albert E. Ebert, also the student's portfolio used by the late Leo Eliel.

Mr. Beal also exhibited some interesting documents from the archives of the Association as follows: An album containing numerous photographs of early members of the association, also an album presented to the American Pharmaceutical Association in 1872, by Henry B. Brady, President of the British Pharmaceutical Conference, containing the photographs of 208 prominent members of that society. Other exhibits shown by Mr. Beal were a bound volume containing the proceedings of the first four meetings of the A. Ph. A. in the handwriting of the Secretaries of those meetings, and a bound volume of the applications for membership from the beginning of the Association to 1868.

As the next order of business the Chair called for nominations for Chairman of the Section for the ensuing year and Hugo Kantrowitz nominated F. C. Godbold, of New Orleans.

There being no further nominations for Chairman, the Chair called for nominations for Secretary. Mr. Meissner nominated F. T. Gordon; this nomination was seconded by L. E. Sayre. There being no further nominations, the Chair said that as there had been only one nomination for each of the offices of the

Section a motion would be in order that the Chair be instructed to cast one ballot for the nominees.

On motion of Hugo Kantrowitz, duly seconded, the Chair cast the ballot of the Section as follows: For F. C. Godbold, as Chairman, and F. T. Gordon, as Secretary.

The Chair announced that there were a number of papers on the program which had not yet been read, and on account of the lateness of the hour, unless there was objection, they would be read by title only. There being no objection, the following were read by title:

"The Evolution of Laws Relating to the Sale and Use of Poisons," by M. I. Wilbert. (See November JOURNAL, p. 1259.)

"Phyto-Chemistry in America, III," by William Theodore Wenzell and Nellie Wakeman.

"The History of Kummerfield's Lotion," by Otto Raubenheimer. (See November JOURNAL, p. 1261.)

"Some Old-Time Brooklyn Drug Stores," by Thos. D. McElhenie.

"History of the Voodoo Cult of the Negroes," by Felix von Oefele.

"History of the American Pharmaceutical Association; The First Decade, 1852 to 1861," by W. C. Alpers.

"Some of the Early Drug Stores in Vermont," by Collins Blakely.

The following contributions were also received and acknowledged by a rising vote of thanks to the contributors:

"The Constitution and By-Laws of the Diastase Club of Chicago," presented by F. B. Hays.

"Anglo-Saxon Leechcraft," Henry S. Wellcome.

"Historical Paper on the College of Pharmacy of the University of Minnesota," F. J. Wulling.

"An Interview With Mr. S. W. Melendy on Early Minnesota Pharmacy," F. J. Wulling.

"Chronology of Pharmacy from 3500 B. C. to 1912 A. D.," John F. Llewellyn.

"Shakespeare on Music as Medicine," Hermann Schelenz.

"The Value of and the Necessity for Instruction in Pharmacy and Chemistry in High Schools," Hermann Schelenz.

"Abyssinian Superstitions in Gynecology," Felix von Oefele.

"Alonzo Robbins, First President of the Pennsylvania State Pharmaceutical Examining Board, 1887-1895" (with photograph), Joseph Lemberger.

"The Sixtieth Anniversary of the New Yorker Deutscher Apotheker Verein, and Their 'Bier Zeitung,'" by Hugo Kantrowitz, New York.

The Chairman announced that this concluded the business, unless there were some of the members present who had new business to present.

Mr. Godbold came into the room at this point, and stated that it would be impossible for him to attend the next meeting of the Association, and asked permission to resign as Chairman, whereupon the Chairman stated that as it was a great disadvantage for the Section to be conducted where the Chairman was absent, he supposed the Section would have to accept Mr. Godbold's resignation, and that nominations to fill the vacancy thus occasioned were in order.

Mr. Whelpley nominated Mr. J. G. Godding for Chairman of the ensuing year, which nomination was seconded by Mr. Beal. There being no further nominations, Mr. Godding was unanimously elected Chairman of the Section for the ensuing year. Upon motion of Mr. R. Lehman, seconded by Mr. Kantrowitz, Acting Chairman Mayo cast the vote of the Section.

Mr. Beal inquired if the paper by Mr. W. A. Alpers on "The History of the A. Ph. A." had come before the Section.

The Chair responded that it had, and that he had commented on the fact that it was a most admirable paper of 35 pages length, covering the history of the first decade of the American Pharmaceutical Association.

Mr. Beal said that the paper was prepared at his earnest request by Mr. Alpers, who had kindly undertaken the preparation of a succinct and condensed history of the American Pharmaceutical Association; that this paper covered the first decade, except the year 1861, when no meeting was held. He stated that some portions of the early proceedings he (Mr. Beal) did not have and could not furnish them and that Mr. Alpers must have found them in some other library; that Mr. Alpers had analyzed and condensed and given the essence of every paper, every report and every resolution of the first decade. Mr. Beal stated that he himself had discovered from the history some things he did not know, and gave as an example that he had learned that a Pharmaceutical Syllabus was prepared and approved by the American Pharmaceutical Association during the first decade of its existence; that the preparation of this history meant an enormous amount of work, and that he would be glad if this Section would adopt a special vote of thanks to Mr. Alpers for what he had done.

On motion of Mr. Kantrowitz, seconded by Mr. Godbold, a rising vote of thanks was extended to Mr. Alpers in accordance with Mr. Beal's suggestion, and the Secretary of the Section was instructed to acquaint Mr. Alpers of this action.

Mr. Beal also moved that the Section tender a special vote of thanks to Wilhelm Bodemann for the presentation of the diploma of Doctor Albert Ebert and the student's portfolio of Leo Eliel, and that the Secretary of the Section be requested to acquaint Mr. Bodemann of the action of the Section.

This motion was seconded by H. M. Whelpley, and being put to a vote was unanimously carried.

On motion of Mr. Kantrowitz, seconded by Mr. Lehman, the Section adjourned to 8 o'clock Friday evening.

SECOND SESSION—Friday Evening, August, 23, 1912.

The second session of the Section on Historical Pharmacy was called to order by Acting Chairman Mayo at 8:45 p. m. in the ball-room of the hotel.

On motion of Prof J. P. Remington, the reading of the minutes of the first session was dispensed with.

The Chair stated that, as the report of the Committee on Chairman's Address was not yet ready, the Section would now have an illustrated lecture on "The Indian Doctor—His Drugs and His Utensils," by Henry M. Whelpley, of St. Louis.

Dr. Whelpley gave an interesting insight into what he termed "the medicine of

the uncivilized world," by his copious explanatory remarks on the many lantern-slide pictures illustrative of his subject projected upon the screen.

On motion of Charles E. Caspari, of St. Louis, a rising vote of thanks was tendered Dr. Whelpley for his very instructive lecture.

The report of the Committee on the Chairman's Address was then presented as follows:

REPORT OF THE COMMITTEE ON THE CHAIRMAN'S ADDRESS.

1. We approve of the recommendation that the papers of this Section should be published in the Journal of this Association.

2. We approve of the recommendation that the Historian should be asked to prepare an index of the material accumulated during the existence of this Section; that a reasonable sum should be appropriated for clerical work, and that said index should be kept up to date by the addition of contributions for each year in alphabetical order.

3-4. We approve the recommendation that the incoming officers should enter into communication with local branches and state pharmaceutical associations with a view to selection of historians or historical committees by these bodies for the purpose of collecting material bearing upon the history of associations, branches, colleges, etc.

5. We do not approve of the recommendation that colleges of pharmacy be asked to add pharmaceutical history to their curricula.

6. We approve of the recommendation that the correspondence of the President and other officers of the Association be transferred to the Historian for preservation in the archives as suggested by President Eberle at the Boston meeting.

7. We approve of the recommendation that, if possible, provision should be made so that the pharmaceutical members of the Council on Pharmacy and Chemistry of the American Medical Association may transfer their bulletins of this Council to the archives of the American Pharmaceutical Association.

8. We approve of the recommendation that veteran druggists' associations be formed in the larger cities.

9. We approve of the recommendation that two sessions of this Section should be held, one in the evening, and that at the evening session an illustrated historical lecture be given.

10. This committee does not fully understand what is meant by recommendation No. 10, and therefore neither approves nor disapproves it, believing that every member of the American Pharmaceutical Association is interested in the Historical Section.

C. J. CLAYTON.

F. W. MEISSNER.

F. C. GODEBOLD.

The report was received and approved, after which the Section, on motion, adjourned *sine die*.

Contributed and Selected

OBJECTS AND LIMITATIONS OF PHARMACEUTICAL EDUCATION.*

J. RYMER YOUNG.

On very good literary authority we are informed that "one man in his time plays many parts," and I am bound to say that my personal experience forces me to the conclusion that when a man or woman enters upon the pharmaceutical stage he or she is certain to illustrate and confirm that Shakespearean dictum. Forty years ago I was a pharmaceutical student within these walls, and, in all probability conducted myself with that impropriety and lack of reverence and decorum characteristic of students in all ages. You will look in vain for my name on these tablets of the famous that adorn these walls, because it is not there.

" 'Tis not for me to "reason why,
Perhaps "someone has blunder'd."

Now, after playing every conceivable character in the repertoire of the Pharmaceutical Society, including, I am glad to say, the extremely pleasant part of presenting rewards to successful workers so gracefully performed today by the President, I am charged with the grave and important rôle of Official Preacher, and I am expected to inculcate the very educational and other virtues which appealed so very lightly to my ethical sense in 1870. There may appear to be an element of Gilbertian humour in selecting me—of all people—to give this inaugural address; but perhaps it indicates that my friends and colleagues recognize that I have now reached that stage of existence when the iteration of "wise saws and modern instances" is the only mental exercise within my declining powers. As that terribly disconcerting master of the art of undressing Truth, G. B. Shaw, says, the man who can—does; the man who cannot—preaches. No doubt the Shavian wisdom was in the mind of the Council when I was asked to discourse to past, present, and future students of the School of Pharmacy gathered here this afternoon, but I must put up with the implication of political superannuation so subtly and gracefully conveyed to me, and must endeavour to convey by verbal (and I hope not verbose) media, those essentials, principles, and truths which, did fate permit, I should like to practise, employ, and illustrate by personal example amongst the younger generations of pharmaceutical aspirants. *

* * * * The objects of true pharmaceutical education are, in my view, not to evolve a mental acrobat, a creature which can swallow unlimited syllabuses, digest them with apparent ease, and convert them into brilliant examination re-

*An address delivered at the reopening of the School of Pharmacy of the Pharmaceutical Society, London. *Ph. Jrn. and Pharm.*, 1912, p. 429.

plies, but to produce worthy pharmacists who shall be, by their art and by their personality, respect-compelling citizens of the community they desire to serve. Some of the most egregious asses in creation are to be met with amongst the scholastic successes of modern educational life—they are plentiful enough, goodness knows—and if I thought the time, money, and energy expended by generations of pharmaceutical Councillors on this School of Pharmacy of ours merely meant the subsidizing of machine-turned medicine handlers, I should grieve over every hour and every coin and every effort recorded in the seventy-one years of official history. Fortunately for those who have emerged from the pupilage state, as well as for those who are now entering upon their technical work here, the Bloomsbury professors and their demonstrators manage somehow to impart something more than the contents of text-books into the minds of those under their charges, and something more than mechanical skill into the manipulative work taken in the laboratories—I mean some of the character, enthusiasm, and some of the personality of the teacher, so that the danger of turning out veneered specimens of pharmaceutical donkeyhood is greatly eliminated. * * * * *

The policy of the Pharmaceutical Society from the very first has been educational, in its best and most rational sense, and during the early years of its existence that policy was one which commended itself to high and low in the calling. I am sadly afraid it is not universally so now. A growing number are always clamoring for what is sometimes called a "bread and butter" policy, which, being interpreted, means, a policy of light exertion and quick returns. I verily believe that the high priests of that policy would not be averse to exchanging their status as registered persons for the possibility of a slightly increased commercial profit. In other words, they are willing to accept the position of pharmaceutical Esaus. The general standard of luxury having risen so high, it is not surprising that pharmacists find the profits of yore inadequate to maintain the comforts demanded by modern convention. Of course, *someone or something* must be blamed for this condition of things, and so "education" comes to be regarded and described as a taking of the financial bread from the pharmaceutical mouth. But it is no more reasonable than it would be to blame a Government Department for a wet summer; or the present Chancellor for bad crops. Much diversity of opinion exists as to the necessity for all the training and drudgery imposed by the Society's examination requirements. "Why should a man be forced to spend three years' hard labor in grinding for a qualification to fit him for the retailing, at cost price or thereabouts, packed parcels of George Washington's Curative Compound?" asks one set of inquirers. "Over-training and scholarship spoil a man for business," is the dogma of another set. "Teach the young men to make a good living instead of dosing them with super science," advise a third set of the practical—or so-called practical—school. But what does it all mean but unreflective and puerile protest against the inexorable fact that "art is long" and that there is no short cut to remunerative excellence in any vocation. Preparation is the only sure basis of success. As a matter of fact, if the "bread and butter" school only knew it there is no better policy for commanding commercial success than rational education. I do not mean the mechanical teaching of dexterity that makes a man into a smart substitute for machinery, but the development and cultivation of mental and moral faculties that enables an average mortal to even-

tually fill his destiny in the work-a-day world, and become "the master of his fate—the captain of his soul."

Education should be a guiding of *existing powers* to their highest forms of expression, not the mere grafting of dead fact upon the tree of life; but in modern practice it too often means the substitution of conventional formulæ for the natural exercise of the thinking and reasoning faculties. Thinking is, thank God, not an exact science, and ought never to be treated as such. Its domain commences where science (by which I mean exact knowledge) ceases, and there are no finite borders within its realms. The courses of study to which a student submits himself should be simply regarded as the alphabet of thought—the A. B. C. which will enable him in due time to become articulate and express his personality in the calling he has chosen—to exercise, in fact, the power of allowing his natural self to dominate his artificially acquired accomplishments. As Sir Thomas Brown says, in language described by a distinguished physician and writer as more admirable than anything in English literature, "Every man truly lives only so long as he acts his nature or in some way makes good the faculties of himself." Depend upon it, if a student is so trained that his personality remains mute under the burden of partially digested data, he will, and can, be nothing more than a servant to his memory, however brilliant his examination record may be. Therefore, I implore every student to be a master of his knowledge rather than allow his facts to enslave his mental and intellectual outlook—in other words, scholastic pabulum should be absorbed as physical luncheons are, that is to say, to "keep up the tabernacle." It is the material from which thought may be developed, and is no more intended to dominate reason than the restaurant is to determine the policy of life. If either gets the upper hand it is bad for the student, for he becomes either a pedant or an epicure, and I do not know which is the more contemptible or useless of the two—both are abominations. If this conception of training and scholarship can be adopted by those destined for a pharmaceutical career and if they mould all the energies of which they are capable into methods for giving effect to the conception in their studies, then most assuredly will it be found that education is no expensive and useless vanity, but the best commercial asset a business man can possess. The modern idea of life is represented to be a mad hustle for money. This may perhaps be a fair representation, I do not know—but what I *do* say is that if it is ordained that man must henceforth coin his brain in drachmas, there is only one successful minting process, and that is the one by which rational education is the main transmuting agency. Before turning to the limitation of education I should like to voice a warning to those embryo Galens, Greenishes, and Tildens who add dignity and picturesqueness to those benches on the left. Don't overdo your work—this caution is probably superfluous, but don't.

"Run if you like, but try to keep your breath;
Work like a man, but don't be worked to death."

In other words, let football and other recreative delights alternate judiciously with the more exhausting pleasures of quantitative analysis, so that with the aid of this happy blending of opposing joys you will not only *do* the right things in after life, but what Ruskin thought more important, you will *enjoy* doing them.

Now as to limitations, if you are not already feeling a desire to place one on me. Education, like the brain ointment of the market-place quack, cannot do everything—there must be *something* to work upon! It has been said that “he who would bring back the wealth of the Indias must first carry out the wealth of the Indias,” which, being translated, means that what you get from the class, lecture, or laboratory bench depends very considerably upon what you bring to it. To treat the School of Pharmacy as an automatic machine into which guineas are put into the slot in the hope of pulling out a certificate of qualification is to invite disappointment and all the attendant evils of misplaced confidence—nothing can come from nothing; but put into the educational crucible the best of the crude, untutored forces of yourselves, and whether a statutory qualification results or not you will emerge with an invaluable possession that will last while life does—the competent skill and knowledge to employ wisely whatever faculties you may have been endowed with. Is that not worth money, oh, ye votaries of “bread and butter” worship?

The moral that I desire to point is one that is applicable to us all, for are we not as a class, nay, even as a nation, drifting into the habit of expecting too much from others—from the Society, from the Government, from the schoolmaster—and too little, much too little, from ourselves? The moral is, trust not to vicarious salvation, but *earn* it by personal worthiness and individual effort. Another limitation of education is that it cannot supply those finer shades of courteous and civil bearing to which we give the name of “breeding.” I do *not* believe that “manners make the man,” for who has not met with polished ninnies?—there are plenty about—but I do hold strongly that a courteous, sincere and respectful habit in one’s relations to others is a very powerful adjunct to the armory of weapons with which one has to fight the difficulties of commercial or professional life. Knowledge does not furnish such an addition, nor can it be obtained from the Turveydrops of today; it can only be acquired, and then perhaps unconsciously, by constant association with the Bayards of the community in which one’s work and one’s play is done. It is a contagious virtue, and I commend in the strongest possible terms the value of choosing for colleagues in school or in life those who carry the bright and attractive outward signs of inherent good breeding and good manners.

I do not wish to weary you by running through the whole category of limits to which education is subject—Heaven knows it is a longish one—but I desire to touch lightly upon one more. All the schools of pharmacy in the universe cannot guarantee to the best of its graduates the gratitude of the public when business life has commenced. Pharmacists need not look for gratitude for, or even recognition of, the public services they render, for they will not get it. Three score years of persistent endeavor to fit themselves for the position of trustees of the public safety have left them indistinguishable, for all practical purposes, from the mass of unqualified adventures in the domain of pharmacy with which this great and free (and foolish) country is swarming. Why, even a brand new, enlightened, up-to-date State system of insurance, admirable as it may be in principle and in conception, places on a dispensing level a man like your President and the man who for three years has juggled with a few stock mixtures in a rural surgery! Could anything be more grotesque? No, there are no laurel

wreaths for pharmacists; there is no popular applause or reward from the exercise of pharmaceutical virtue as inculcated here in our School, and if any would-be student is so constituted as not to be able to exist unless placed in the draught of the *aura popularis* I should advise him to get his money back from the Secretary, if he can, and flee from the precincts of Bloomsbury to the region sacred to the profession. But *do* we want the unstable rewards of the gallery when we can, by ourselves, command by courage, sincerity, and straight dealing the respect and confidence of the people in the midst of whom we have our temporary, and temporal, pitch? Personally, I do not think we do, for with the belief of one's fellows in one's integrity and veracity all that is worth anything will come in due season and in due sequence, even unto adequate remuneration.

It seems to me necessary that I should bring these thoughts into my remarks, as my experience as a past-President brought me into contact with many pathetic instances of the Society being blamed for the ingratitude of a locality towards a hopelessly impossible chemist and druggist.

I have already said that the policy of the Pharmaceutical Society has always been, and still is, educational, and for this there is occasion to be grateful; but we cannot, of course, afford to ignore the fact that there is a commercial aspect of affairs that demands consideration, and in this, quite naturally, your professors and School are powerless to help you. It must not be forgotten that nowadays capital is absolutely necessary in establishing and developing a good sound business. Of course, it was always so, more or less, but more, much more now than ever before. I am fully aware that it does not require any great strain on the exchequer in order to dispense the average prescription, and you may have satisfied the Board of Examiners as to your fitness for *that* particular class of work, but you have yet to satisfy a critical and often very unreasonable, sceptical public as to that same fact—a much more difficult task, I assure you—and to do this you will need tact, perseverance, enterprise, patience, and time. In addition, and quite as essential, you must have a well-equipped pharmacy, in a good, likely position. Obviously all this means money. I do not forget that many excellent businesses have been built up, the proprietors of which commenced with practically nothing in the way of pecuniary advantages. All honour to these men of grit and pluck. On the other hand, the fact cannot be overlooked that there are instances, familiar to us all, where with capital ample, position good, pharmacy quite first-class, and introduction influential, yet withal the owners thereof seem to have made a wretched botch of things. I am conscious of all this, but I am not dealing with the exceptional and abnormal, but with the rank and file, with the majority, the normal; and I repeat that unless furnished with a fair amount of the needful the budding pharmacist is terribly handicapped. In such circumstances the game, in my opinion, is not worth the candle.

It is common knowledge that not more than 25 per cent. (probably not so many) of the chemists in business in this country find it possible to extract a decent living out of pharmacy pure and simple, and by that I mean dispensing and the sale of poisons; the rest of us, including myself, have to augment our incomes as best we can by sidelines and other departments, which are legitimate and appropriate enough, but it must always be remembered that we are thus

brought into direct and severe competition with huge resources and unlimited capital.

Will you now forgive me making an appeal, a final appeal, to the young men and women who enter upon their finishing course today? There is nothing so likely to return a heavy dividend upon a small capital outlay of trouble as the cultivation of a habit of clearness and lucidity in speech, in writing, and in thought. Half the troubles of the business world would not occur if everyone spoke with knowledge and directness, and wrote his epistles so that the recipient can decipher and understand them readily. May I recall the story of a celebrated ecclesiastic who was trying to read a letter from Dean Stanley, who was a notoriously bad writer? "This is a lovely letter of Stanley's," said the dignitary, sweetly, "but so far I have only managed to read one word, and that *looks* like 'damn!'" In regard to clear thinking, I do sincerely hope you will not confine your powers of concentration to the detection of subtle differences between COOH and CHO_2 , but will extend them to political and other extra-pharmaceutical matters, so that future Presidents may not have to face the painful experiences I had to wrestle with in 1908, when many registered men appeared to be incapable of grasping the radical difference between economic adjustment and cowardly surrender, betwixt equitable compromise and disgraceful betrayal. I want the future pharmacist to be a man of the world and a man of common sense; firm without narrowness, progressive without rashness, I want him to become what Professor Remington said of Michael Carteghe:—

"A man whose soul is pure and strong,
Whose sword is bright and keen,
Who knows the splendour of the fight,
And what its issues mean."

So shall he become a power in the land, a pride to pharmacy, and a blessing to his day and generation.

Papers Presented to Local Branches

ABSTRACT OF THE REPORT ON MEDICINAL PLANTS AND DRUGS AT THE LAST ANNUAL MEETING OF THE ASSOCIATION OF OFFICIAL AGRICULTURAL CHEMISTS.*

L. F. KEBLER, REFEREE.

During the past year the cooperative work on drug problems in conjunction with the Association of Official Agricultural Chemists has been very satisfactory. The number of cooperators taking part was unusually large and all manifested a spirit of interest in the work. The Referee's report was submitted under the following headings:

1. Methods of sampling.
2. Methods of analysis.
3. Inadequate standards.
4. Results.

It is well recognized that the procuring of representative samples for analytical work is the first important step in securing uniformity of chemical analyses. So long as we are not certain of obtaining samples which represent the total average of the material of a given consignment, we can never rely on the results directly setting forth the quality of the goods handled. In the taking of samples it is necessary to take into consideration the character of the goods to be sampled, the nature of the container, the probable climatic conditions obtaining, and the source of production. Experience covering a number of years shows the difficulty confronting the analyst, and in order to bring about uniform action and ultimately avoiding friction and reassaying, the referee recommended that a committee be appointed to take up the entire subject of drug sampling and report back to the Association at the next annual meeting. It is not unusual to meet with consignments containing hundreds of bales or bags or kegs or pockets or carboys or barrels, etc. The question naturally arising is how many packages shall be sampled in order to obtain material that will fairly represent the commodity under consideration. In the case of ergot, for example, it was found that one bag in ten may be found inferior and it sometimes happens that this one particular bag is selected for sample. The result is that the entire delivery is withheld. On the other hand if one of the other nine bags is sampled, the shipment is released with the result that the inferior package finds its way into the trade. It is exceedingly difficult to sample the bales of a large consignment so as to procure satisfactory results. It has been found that the outside of a bale, for example, will be perfectly satisfactory, whereas, the interior is of an inferior character. The number of bales to be examined is also a difficult matter to determine

* Read before the City of Washington Branch, October, 1912.

in every case. For example, one bale of belladonna root will show an alkaloidal content much below that prescribed by the standard, while many other bales of the same consignment comply with the standard. Under these conditions it has been found necessary at times to sample every bale, in an entire consignment in order to secure satisfactory results.

Similar questions were discussed in conjunction with gums, resins, oils, products solid at one temperature and liquid at another, semi-solids, balsams, etc.

Methods of Analysis: In order to arrive at a fair conclusion relative to an article, it is necessary to take into consideration all factors that may throw light upon the subject. The first point that naturally presents itself is the physical appearance of the commodity. If the article is not of normal appearance, suspicion is aroused immediately. The next two factors of great importance are odor and taste. Anyone familiar with these two factors of various crude drugs he is liable to meet is fortunate indeed. Much time may often be saved by submitting a given sample to microscopical examination before applying chemical methods. It is often necessary also to resort to mechanical means to determine the amount of foreign material that may be present in a given sample.

Inadequate Standards: The Pharmacopoeial standards for buchu leaves, for example, makes no provision whatever for the presence of any stems or other incidental foreign material which is liable to find its way into the drug at the time of collection. If such a standard were put into force and effect, the amount of this drug imported into the United States would be exceedingly small. In practice it has been found necessary to allow a certain amount of foreign material referred to above. What has been said in connection with buchu leaves also holds for many other leaves. Imitation balsam Peru complying with the test of the Pharmacopoeia in every detail has been met with. It is, however, not identical chemically with the natural product, neither has it been shown that its therapeutic properties are the same. The test prescribed by the Pharmacopoeia for morphine sulphate permits the presence of a considerable quantity of codeine and other alkaloidal bodies derived from opium. In case the chemist is examining a sample of morphine sulphate according to the test prescribed by the Pharmacopoeia and it complies in every respect with this test, he must of necessity report it as satisfactory. If this morphine sulphate containing a goodly proportion of codeine is now used in the manufacture of morphine sulphate tablets or other mixtures in which the morphine sulphate present is an important part, and the analyst discovers codeine, he immediately infers that the original material was contaminated with this alkaloid, or the product is not properly named, or may even be misbranded in view of the fact that the codeine is not declared, a condition which might cause some embarrassment.

The standards for the essential oils and the methods for arriving at same are very inadequate, as most analysts know. In fact, there is no difficulty whatever in manipulating some of the oils so as to comply with the standard prescribed in accordance with the methods detailed for arriving at same.

The standard for copaiba also is decidedly inadequate, it is believed, largely for the reason that we know so little about the actual composition of this commodity. In order to eliminate many of the uncertainties it will undoubtedly be

necessary to study the article from the source of production to the time of consumption.

Results: These can best be indicated by giving short resumé of the subjects considered which follow: H. H. Rusby, Associate Referee on macroscopic and microscopic study of plant drugs has been working on the subject of providing adequate descriptions of crude plant drugs not available at present. This will necessitate elaborating some of the standards for certain Pharmacopoeial drugs.

MEDICATED SOFT DRINKS.

G. W. HOOVER, ASSOCIATE REFEREE.

The work was confined to the determination of constituents (caffeine, cocaine, phosphoric acid) and the estimation of the total solids. The cooperative sample was prepared so as to represent as far as possible a number of preparations which have been found upon the market.

The results obtained by a majority of the chemists in the determination of caffeine were satisfactory. The figures show that if the method outlined is carefully followed, concordant and accurate results will be secured. The caffeine is obtained quite pure without subjecting it to a special method of purification.

The results for cocaine were slightly low. The quantity in the preparation, however, compared with caffeine, is quite small, and in view of the complex composition of the mixture, the results obtained in the estimation of cocaine were also satisfactory.

The method outlined for phosphoric acid is quite lengthy, but the results showed that if it is strictly followed, an accurate determination of this constituent can be made.

The results of the method for the determination of total solids showed too wide a variation. It was found that more concordant results were obtained by using a comparatively small quantity of the sample (2 to 4 grams) than by using a larger quantity, and it is evident that further work upon the determination of total solids is necessary.

HEADACHE MIXTURES.

W. O. EMERY, ASSOCIATE REFEREE.

In the past the cooperative work has had to do with mixtures of the referee's compounding, while that of the year just completed involved commercial products obtained on the market. The preparations were in tablet form. Twenty tablets together with the necessary directions for procedure were furnished each of the dozen co-workers. One mixture sent out contained as active ingredients caffeine, and acetphenetidin; another, codeine, acetanilide and sodium salicylate; and a third, codeine sulphate, antipyrine and acetphenetidin.

In general, the results may be considered very satisfactory in view of the inherent difficulties peculiar to certain preparations involved; more particularly, however, for the reason that probably one-half of the collaborators had not had any previous experience with such work, all of which indicates that the methods submitted are correct in principle and need only to be varied in detail to meet the problems arising from special combinations.

A method was devised in connection with the examination of mixtures containing caffeine, acetanilide, quinine and morphine. The separation is based on the solubility of caffeine and acetanilide in chloroform, while the sulphates of quinine and morphine are insoluble in this reagent. The alkaloids were separated from each other by virtue of the insolubility of sodium morphinate in the aforesaid solvent. The morphine itself being finally extracted as such with chloroform (carrying a little alcohol) from an aqueous solution containing common salt in excess together with a little ammonium salt.

W. O. Emery and C. D. Wright undertook a study of aspirin tablets and capsules, more especially melting temperature alone and in admixture with salicylic acid in various proportions, and finally the acid values of these compounds.

C. C. LeFebvre investigated the method of determining salol alone as well as in admixture with acetphenetidin, having already succeeded in estimating salol both in separate form and in original tablets by hydrolyzing into phenol and salicylic acid and subsequently titration with a standard bromine solution.

COOPERATIVE WORK ON THE DETERMINATION OF CAMPHOR.

E. K. NELSON.

A sample of Spirit of Camphor, prepared carefully according to the Pharmacopoeia was submitted to twenty-three analysts for the determination of camphor by the hydroxylamine titration method as outlined in Circular No. 77 of the Bureau of Chemistry. The results reported by nineteen analysts varied from 8.33% to 9.72%, while four analysts found slightly more camphor than was actually present.

The average of all results reported was 9.02%, or a deficiency of nearly 10% figured on the camphor actually present. The consensus of opinion as expressed by the various analysts was that the conversion of camphor into oxim was not complete. The method can not, therefore, be recommended for exact work.

THE DETERMINATION OF SMALL QUANTITIES OF PEPSIN IN LIQUIDS.

V. K. CHESTNUT.

The method used in this work was essentially the Jacoby procedure as modified by Solm. A 0.4 per cent. solution of U. S. P. pepsin in N 10 hydrochloric acid previously saturated with chloroform was sent out together with some standard pepsin and ricin. The sample was analyzed by seven cooperators. The results reported varied widely. One analyst reported 1 per cent., but the others found between 0.09 and 0.38 per cent. The particularly interesting feature of the results was that the reports seemed to indicate a somewhat uniformly progressive decomposition of the pepsin due perhaps partly to the summer temperature and agitation to which they were subjected or to the action of the chloroform added to the hydrochloric acid to conserve the pepsin against the action of molds. The highest percentage found was obtained at Washington in a sample kept in cold storage and analyzed three days after it was made up. The same sample yielded only 0.2 per cent. 40 days later, and another held at room temperature during the 40 days gave only 0.1 per cent.

ESTIMATING NITROGLYCERIN IN TABLETS.

A. G. MURRAY.

Cooperative work on nitroglycerin tablets was carried out on two samples. Nineteen collaborators reported. Considering the rather complicated nature of the methods, the minute quantity of nitroglycerin to be determined, and the lack of experience with the methods of many of the collaborators, the results were as good as could be expected. The completeness of the extraction of nitroglycerin from the tablets should be investigated.

A STUDY OF THE LEAD NUMBER OF ASAFOETIDA AND ALLIED PRODUCTS.

E. C. MERRILL.

This is a method of measuring the lead precipitate of asafoetida and various other similar products by precipitation of a gram sample of the ether purified resin (dried five hours at 110° C.) by means of a 5% lead acetate solution in 80% alcohol. The uncombined lead is determined by filtering off an aliquot portion and determining the lead as sulphate. By carrying a control test the amount of lead combined may be calculated from the difference of the two, and the lead number expressed in terms of milligrams of metallic lead per gram of sample.

The following results have been obtained:

Asafoetida 222, galbanum 4, ammoniacum 75, olibanum none, guaiac 171, myrrh 7, colophony 142, beddium 55, sandarac 251, mastic 34, gamboge 9, dragon's blood 0, euphobium 34, "pepper asafoetida" 82.

This method gives results which may be checked by independent workers although the value is not absolute on account of incomplete drying of the ether purified resin. It is however sufficient to give comparative results.

COOPERATIVE RESULTS ON MORPHINE ESTIMATION.

H. E. BUCHBINDER.

The method studied was that proposed by Eaton. The main features of the method for opium are as follows:

The opium is digested in lime water, the lime water is filtered and an aliquot taken. The latter is shaken out repeatedly with chloroform to remove other alkaloids, then ammonium chloride is added and the morphine is shaken out with a mixture of chloroform and alcohol. The latter is evaporated and the residue titrated with standard acid and standard alkali.

The methods for paregoric and syrup are adaptations of the opium method.

The results of the collaborators showed that in case of powdered opium the conditions prescribed do not insure the complete exhaustion of the powder, also that it is practically impossible to get rid of the other alkaloids by direct extractions. The results on paregoric were decidedly better than those on opium, but were not altogether satisfactory.

Gave the results of a study of a number of topics having a bearing on certain analytical methods for morphine.

1. *Does chloroform take up morphine from an alkaline (fixed alkali) solu-*

tion? It was found that with a certain excess of alkali the amount taken up is negligible.

2. *Chloroform plus alcohol as a solvent for morphine.* In this connection the distribution of alcohol between chloroform and water, as well as solubility of morphine in chloroformic alcohol and aqueous alcohol, were studied.

3. *Chloroform alone as an extracting solvent.* Conditions were found under which small quantities of chloroform can be used with great convenience to extract morphine from an aqueous solution. This is made possible by the conversion of the morphine into a form ten times more soluble than the ordinary "crystalline" variety.

4. *The Eaton methods.* The chief defect is the practical impossibility of removing the other alkaloids from the lime water solution. A "negative" test is misleading.

5. *An error of the U. S. P. method.* The amount of morphine remaining in the mother liquor was found to be about 140 mgms.

6. *New methods for opium and opiates.* The salient features are: First, the use of chloroform alone as an extracting solvent for morphine; second, the use of barium salts as precipitants of resinous impurities, thus entirely overcoming the difficulty of emulsions.

The following is a brief outline of the proposed method for powdered opium.

The initial extraction of the powder is effected by digestion with hot water, followed by the addition of 10% sodium hydroxid and shaking during a short interval. The solution is saturated with salt, diluted with saturated salt solution, and after the addition of barium chlorid, is made up to volume with saturated salt solution. After filtration an aliquot is taken. The latter is acidified with concentrated hydrochloric acid and then rendered ammoniacal with concentrated ammonia, the quantities of the acid and the ammonia being carefully regulated so as to secure certain definite concentrations of free ammonia and ammonium salts. After the addition of some alcohol, the morphine, accompanied by a certain amount of other alkaloids, is extracted with chloroform. A few extractions with very small quantities of a saturated salt solution containing about 2% of sodium hydroxid, take out all the morphine from the chloroform extract. The almost negligible amount of other alkaloids carried by the alkaline-salt extractions is removed by means of one or more shake-outs with chloroform. The morphine is then re-extracted with chloroform under conditions similar to those in the first extraction with chloroform. After the evaporation of the chloroform, the residue is titrated by means of standard acid and alkali. With experience the entire analysis can be completed within 2 1/2 hours.

Methods are also offered for laudanum, paregoric, etc. Those are adaptations of the basic method—that for opium.

A COMPARISON OF VALUES OBTAINED FOR THE REFRACTIVE INDICES OF AQUEOUS SOLUTIONS OF ETHYL AND METHYL ALCOHOLS.

B. H. ST. JOHN.

This paper embodies the comparison of the values obtained by different investigators for the refractive indices of the aqueous solutions of ethyl and

methyl alcohols reduced to the same temperature by means of the temperature coefficients given by Doroshevski. The values compared are those of Deville, Wagner, Leach and Lythgoe, Doroshevski, and Andrews for ethyl alcohol; and of Drude, Wagner, Leach and Lythgoe, and Doroshevski for methyl alcohol.

HABIT-FORMING DRUGS.*

S. L. HILTON.

To all of us this subject is more or less familiar and generally speaking we as pharmacists have a very clear understanding as to what are or what are not habit-forming drugs. However, many drugs that were considered a few years ago as harmless have been proven harmful and habit-forming, this is probably best illustrated by one of the so-called derivatives of morphine, heroin or di-acetyl morphine.

There is not today a morphine habitue who will not as readily use heroin as they formerly used morphine. The sale of heroin or di-acetyl morphine or its tablets, has increased tremendously, not only with the drug trade, but large quantities of the drug have been disposed of by peddlers to habitues, so that those having the enforcement of drug laws have been compelled to use every means at their command to circumvent this traffic.

At the outset, and after this condition became known, it seemed almost impossible with the present laws to reach the real offenders, however, after consultation with many who were in a position to advise, and after much deliberation a decision was reached to bring a case in court with the hopes that something might be done. This was tried, with the result that the court held that heroin came under the provisions of Sec. 11, of the "Act to regulate the practice of pharmacy and the sale of poisons," that heroin was a salt of morphine, consequently the law had been violated, as the sale had not been made on prescription, and imposed a moderate penalty. Since then several more cases have been tried with like results.

While this is a decision of the lower or Police Court, no appeal in any case having been taken, it consequently stands as to settling the status of heroin, in the District of Columbia, unless or until in some future case brought it is carried to the Appellate Court of this District. It is not for me to predict what a higher court might or might not decide if such a case is brought, but it would seem that, using the rule of reason as defined by the U. S. Supreme Court, and taking into consideration the proper protection of the public health, coupled with the fact that heroin is a product of morphine, and by many authorities considered the di-acetate of morphine, it is reasonable to expect that the higher court would so construe the law as to include heroin or di-acetyl morphine as a salt of morphine, thereby approving the decision of the Police Court.

With the decision of the Police Court and unless it is reversed by a higher court all sales of heroin or its salts, in the District of Columbia, can only be

*Read before the City of Washington Branch, Nov. 13, 1912.

made on the prescription of a physician, dentist or veterinarian, said prescription cannot be renewed except on the written order of the original prescriber, and further, preparations containing more than 1/4 gr. of heroin to the ounce cannot be sold except on prescription.

What then is the true position of apomorphine, codeine, dionin and peronin, all of which are derivatives of morphine and some at least can be used interchangeably to produce similar effects; likewise what is the position of those derivatives and substitutes for cocaine?

Should not some means be devised to prohibit the promiscuous use of all of these products by the public? Personally I believe they should not be sold or used other than by the advice of a physician, and then only for the occasion for which it was prescribed. This then makes further legislation necessary, and, while the drug trade has had the past few years legislation sufficient, it seems now necessary to amend the present laws so as to completely stop the promiscuous sale and traffic in all dangerous and habit-forming drugs.

Shortly after the decision of the Police Court previously referred to, the writer submitted to many scientific gentlemen and several bureaus of the government the question as to the status of the so-called derivatives of morphine, apomorphine, codeine, dionin, heroin and peronin and requested an expression of opinion as to whether they were or were not salts of morphine. The answers received show much difference of opinion, as for instance, one bureau classes all of the products as derivatives and says they cannot be considered as salts; the chief of the chemical division of another bureau classes heroin as a salt of morphine, the di-acetate, and quoted good authorities for this decision, the other salts as derivatives; the chief of another laboratory likewise classes heroin as a salt of morphine, and says the other products are not salts of morphine, yet he calls attention to the definition of a "Salt in Chemistry" as defined by the Century Dictionary, "Any acid in which one or more atoms of hydrogen have been replaced with metallic atoms or basic radicals; any base in which the hydrogen atoms have been more or less replaced by non-metallic atoms or acid radicals, also, the product of the direct union of a metallic oxide an anhydride." (J. P. Cooke, Chem. Phil., p. 110). Also, "from a purely medicinal point of view the several compounds named have physiological properties more or less related and several of them at least can be and are used interchangeably to produce similar effects." He further says from a more liberal point of view and under the interpretation of the U. S. Supreme Court, of what is meant by a "reasonable" interpretation, these preparations might be considered salts of morphine.

Another gentleman of high standing in the scientific world says, apomorphine is dehydrated morphine and therefore morphine minus a molecule of water. He classes all of the other products as salts of morphine and further holds that the words derivative and salt, in this connection, should be considered as synonymous terms.

Others communicated with failed to reply or their answers were evasive. We therefore clearly see that scientific men differ, some looking upon the question from a scientific viewpoint only, while others have considered the question in the broadest possible sense.

Recently the New York Board of Health has held that codeine and heroin are not salts of opium or morphine.

From the above it will be seen that this question is far from being settled and I would therefore then recommend that in all new laws or amendments proposed to present laws, that the phraseology used in the narcotic section be made more definite and explicit, reading possibly something as follows: "Morphine, salts of morphine, its derivatives or substances having similar narcotic properties and any other preparation or substance containing any morphine, salts of morphine, derivative of or substance having similar narcotic properties." This same suggestion to apply also to cocaine, opium and chloral hydrate.

While discussing this subject and along the same lines to be considered there should be a provision in every pharmacy law prohibiting the sale of any narcotic or habit-forming drug or poison, by any one, except a licensed pharmacist or directly under the supervision of a licensed pharmacist, whether it be at retail or wholesale.

The sale of narcotics and poisons by dental supply depots, surgical supply houses and other places of like character should be prohibited, unless they are under the direct supervision of a licensed pharmacist, sales then to be made to licensed physicians or dentists, and only on their written order, which order should be filed for a definite period and should state specifically the use for which said drug was intended and it should not again be refilled.

Recently the Commissioners of the District of Columbia submitted to the Board of Pharmacy, of which I am a member, a proposed bill to supersede the bill now pending before Congress, proposing to grant special privileges to dental supply depots only, and requesting an expression of opinion of the board. After discussing the necessity of any such measure, taking into consideration the provisions of the present law which clearly provides for the wholesale business, the board disapproved same for the following reasons.

It is unnecessary, the present law being ample and sufficient and easily complied with.

It would establish a bad precedent which would certainly lead to similar demands from other classes.

It is class legislation for the reason that it provides for the dental branch only.

Further, we believed the sale of habit-forming or narcotic drugs should be further restricted, rather, than by law extended, the present law not working any undue hardship on anyone and the sale by a dental supply depot, in violation of the present law, of 200 ounces of cocaine tablets, to a dentist in another state, as admitted at a hearing on this question, the past winter before a Senate Committee, should be sufficient reason to further restrict the sale of narcotic drugs instead of extending the privileges.

The Board submitted the proposed bill to those gentlemen appearing at the last hearing in opposition to the pending measure of similar character, with the result that each any every one of them have disapproved this new amendment and the Commissioners of the District of Columbia have been so notified.

I therefore then again recommend that all pharmacy laws enacted should contain a rigid provision applying to the wholesale distribution of narcotic drugs by

placing their sale under the supervision of a licensed pharmacist, as is required by the law of the District of Columbia, further some provision covering interstate shipment of all such products is badly needed and should be enacted in the near future.

THE RELATION OF PHARMACY TO DENTISTRY.*

DR. I. N. BROOMELL, PHILADELPHIA.

A proper consideration of the subject which has been assigned to me, "The Relation of Pharmacy to Dentistry," includes three factors. The pharmacist and his work, the dentist and his work, and the layman with his needs and desires. In other words, the relationship between pharmacy and dentistry is quite similar to the relationship existing between pharmacy and general medical practice, with the very important difference that the dealings are proportionately very much less between the two former. Pharmacy may be defined as the art of preparing and compounding medicines, while dentistry may be defined as the science or art of caring for the teeth and their diseased conditions. If the work of the dentist, so called, were to be confined to the care of the teeth alone, the relationship between pharmacy and dentistry would be very limited indeed. While the term dentist is almost universally employed, I am pleased to state that there is a very marked tendency in favor of the term stomatologist, this being more in keeping with the practice of one who has for his field of activity the entire mouth cavity.

In a recent visit through the middle West, I noticed many times, and with considerable pride, the inscription "Stomatologist," where the term "Dentist" would formerly have been employed. In this city the leading dental society is known as the Academy of Stomatology, and the American Medical Association has its section on Stomatology. I mention these facts to impress upon the minds of those present that the work of the dentist is no longer confined to the care of the teeth alone, but that his scope properly includes all tissues both hard and soft within the cavity of the mouth. Filling teeth as a means of preventing the progress of dental caries calls for no intercommunication between the dentist and the pharmacist; the treatment of an alveolar abscess, either acute or chronic, can be carried on by the dentist independent of the pharmacist. Prosthetic appliances can be inserted, and, in fact, all work which strictly speaking was formerly considered within the extent of dental practice could proceed with a very few drugs and without any dealings in common between the pharmacist and the dentist. But as already intimated, the dentistry of today is stomatological in extent, and to a great degree prophylactic in character, and while a majority of the operations performed on the teeth are fundamentally mechanical and necessarily so, pathology involving the mucous membrane and a better recognition of the importance of oral and dental prophylaxis in many instances calls for the employment of drugs for their proper care and treatment, and it is chiefly for this reason that there is

*Read before the Philadelphia Branch, Nov. 5, 1912.

some common relationship existing between the professions of pharmacy and dentistry.

This brings us very clearly to the consideration of mouth washes and dentifrices. I am already on record as having some rather peculiar ideas about these preparations. Ideas which are in a general way antagonistic to their use, especially to their indiscriminate use. In other words, I believe the ultimate beneficial effect from the use of the average mouth wash or tooth powder to be very much overestimated, and I will deal with the subject from this standpoint. And just here the third factor of the general subject, "the layman," must receive some consideration. Almost daily the dentist is asked for advice as to what tooth powder, tooth wash or mouth wash should be used, and if there is any virtue in any of these preparations, the dentist should be able to discriminate between the good and the bad. Through the admission of one of the foremost pharmacists of this city, I am advised "that if there is any one thing that the pharmacist knows nothing about, it is the proper use of dentifrices, and, therefore, they are not in a position to know what drugs should be used in tooth preparations, or what dentifrices they should sell." After twenty-five years of continuous dental practice, during which time my association with the members of the profession has been quite generous, and after years of active interest in dental society meetings, and the more or less constant perusal of dental journals, I am impressed with the idea, and almost ashamed to acknowledge that the average dentist knows perhaps as little about this subject as the pharmacist. In combination this is rather a deplorable state of affairs, and shows, I believe, the wisdom of the committee in bringing about this symposium. The question before us would, therefore, seem to be, what and when to prescribe drugs for the care of the mouth and teeth.

The pathology of the mouth is quite variable in character, consequently a remedy which will bring about a cure in one case, will result in failure in another, and the prophylactic preparation which will prove to be of value in one mouth will be ineffectual in another. What is needed, therefore, is for the dentist to be able to decide in each individual case just what is required in the nature of a dentifrice or mouth wash, and to write out a prescription for the same which should be compounded by the pharmacist, with the same care usually given to prescriptions coming from the physician. On the strength of the foregoing statements is based the opinion already expressed in regard to the average dental preparation of today. Not that I believe them to be harmful, but because of their total inefficiency in many and perhaps most cases. I have little or no use for the average ready made mouth wash. I believe these preparations to be about as potent as a hair restorer, or a magic ring for the cure of rheumatism. In making this statement I do not mean to infer that there are no mouth washes which contain the proper ingredients to make them act as they are expected to act in some certain cases, but their weakness lies in the fact that they are so promptly eliminated. In other words, they are not in contact with the parts upon which they are intended to act for a sufficient length of time to be of any positive value.

It is now a well established fact that the first stage of decay of the teeth takes place through a decalcification of the tooth tissues, by acids which are generated in the mouth by fermentation, this fermentation being the result of bacterial action. In the process of calcification of the teeth, the various centers of calcifi-

eration spread toward each other and finally coalesce, or at least this is what they should do, but in many instances the teeth erupt before this union is complete, resulting in a congenital defect, represented by the deeply sulcated grooves on the ocular or grinding surface of the bicuspid and molars, and as a result bacterial plaques are formed in these locations, perhaps more frequently than any other point. However, all inaccessible parts, which usually means those parts not subjected to friction, either natural or artificial, are likely to be affected by caries, and it is in such places as these that the mouth wash, if properly compounded, might be of some benefit as a prophylactic measure. I say properly compounded, because we must not lose sight of the fact that the cause and effect of caries of the teeth varies greatly in different individuals, and very frequently at different times in the same individual, so that a dentifrice or mouth wash which might be effectual in one case, or at one time might be ineffectual in another case, or at another time. So far as the care of the teeth is concerned in the way of the prevention of caries, the relation between the pharmacist and the dentist must be through prophylactic measures. While it is an established fact that clean teeth will not decay, it is also equally true that all teeth that are not clean do not decay. There appears what might be termed a predisposition, or a condition of immunity which regulates this to a certain extent. I believe it might be stated with a good deal of certainty and without fear of positive contradiction that caries of the teeth is just about as prevalent in the mouths of those persons who give their teeth regular and systematic care, as it is in the mouths of those who are totally indifferent in regard to the matter, and the question of predisposition and immunity is entirely responsible for this, and within certain limitations, heredity, habits of life, diet, etc., are responsible for this predisposition or immunity.

In making the foregoing statement, I do not wish to be understood as being opposed to oral hygiene. Certainly the mouth which is the gateway to the alimentary canal, of all parts, should be kept free from unclean or septic material.

Dr. Head will perhaps tell you that the abrasive action of the tooth brush when loaded with some tooth powders will in many instances result in a partial destruction of tooth substance, and necessarily in most instances this must first be the enamel. I cannot share in this belief, in fact I am unalterably opposed to such a theory. Occasionally when there has been a recession of the gum tissue resulting in laying bare the root and root membrane, destructive abrasion from the use of the brush might result, but never will such a result follow when the enamel only is subjected to such treatment. In support of this argument it is only necessary to refer to the chemical and histological structure of the teeth when it will at once be recognized that a destructive process can only take place through acid decalcification. Enamel with its 97 per cent. of inorganic matter and with a structural arrangement of the enamel roots or prisms placed on end, and generally at right angles to the long axis of the tooth, and cemented together with an almost indestructible substance makes it by far the hardest structure in the body, and fortifies it with a resisting power against external influences almost beyond limitation, except the influence be a chemical one.

Just one final thought in regard to the relationship of pharmacy to dentistry, and that is in reference to the detrimental effects which frequently follow the administration of certain acid compounds ordered by physicians' prescriptions. I

refer more particularly to the tincture of ferric chloride, the immediate effect being a predisposition to disturb the glass-like finish on the surface of the enamel, which in turn will favor the formation of bacterial plagues. Other acid preparations taken in excess into the mouth without any effort to neutralize would of course have the same effect to some extent.

It will be observed that I have made no suggestions or recommendations in regard to what drugs to employ in dealing with the various mouth-conditions, preferring to leave this to those whose line of thought is more in this direction. If I were to make any suggestions, it would be in favor of the only good mouth wash that I know of, and I do not hesitate to speak of it here. It is not often that I give a public testimonial, because this would be regarded as unethical and unwise, but I am going to disregard this unwritten rule, and testify to the merits of one particular mouth wash, because it is better than any other on the market today. I have no shares of stock in this to influence my boosting it, neither do I distribute it to my patients in the form of attractive samples, so you can see that my recommendation is made solely on the merits of the product.

I shall recommend this first, because I know it to be an antiseptic, a germicide, an alkali, an aid to digestion, and it is even reputed to prevent or retard caries of the teeth. It combines all these good features without containing one ingredient that is in the least harmful to the delicate structure of the mouth. Its action is both physiological and chemical. There are, however, one or two drawbacks to this mouth-wash; it is not always the same. While it is mostly alkaline, it sometimes changes and becomes strongly acid, and frequently the receptacle in which it is kept is at fault, being unclean both inside and out, thus changing its good qualities. These two faults may, however, be overcome with a little care on the part of the producer, whose attention has been repeatedly called to it.

Knowing all this to be true, I do not hesitate to indorse this product, which, however, is not in the public market as yet; it is nature's mouth-wash—the human saliva. My remarks are therefore in the nature of a plea for normal conditions in the mouth, and if these normal conditions cannot be brought about physiologically or by instrumentation, then medicinal agents must be resorted to, and as before stated these should be compounded to suit each individual case.

DENTIFRICES AND THEIR INGREDIENTS.*

JOSEPH HEAD, M. D., D. D. S., PHILADELPHIA.

The question, what ingredients should make up an antiseptic dentifrice, is by no means simple. Chemicals may destroy the acid forming germs but at the same time so lower the natural resistive action of the tissues that the final condition of the mouth after treatment may be worse rather than better.

Clinical experience proves conclusively that unclean mouths exist where there is practically neither tooth decay nor tissue infection, and likewise shows that

*Read before the Philadelphia Branch, Nov. 5, 1912.

uncared for mouths exist where there are no bacterial deposits to speak of. This resisting tendency against the forces of infection may lie within the tissues of the mouth, but since the saliva seems unquestionably to possess, outside of mere alkalinity, a power to restrain enamel decalcification, it is easily possible that it may also exert some similar restraint on the infection of the remainder of the oral tissues as well.

The problem before us is as follows: The mouth contains certain self-protecting elements and tendencies against infection. When these are overthrown by a virulent bacterial invasion, infection results. In restoring health all bacterial deposits that can be readily reached should be removed mechanically, and the antiseptic washes to be used to assist in overcoming the remaining infection should supplant, not oppose the natural health-restoring processes of the mouth. That there are at least two classes of such health-restoring processes in the mouth seems indisputable: First, a substance or enzyme that is present for a specific purpose of special protection which is illustrated by the saliva's property of retarding enamel decalcification. The other class consists of an automatic power of resistance and self-repair which is illustrated by the power possessed by tooth enamel to reharden under partial decalcification, as well as its power to harden the surface when its softer under-substance is exposed by grinding to the saliva or air.

That saliva does possess the power of restraining enamel from acid decalcification is shown by the following test: A sound extracted tooth was placed in a sparklet or automatic soda-water-former in which the liquid could be charged from a carbon dioxid cartridge. Thirty cubic centimeters of saliva, which had been obtained by chewing rubber, were added. The saliva was then charged with carbon dioxid and the syphon placed in a culture oven for thirty days. At the end of that time the tooth was taken out. It appeared unharmed. The tooth was then wiped with a little ether to remove any grease, and replaced in the syphon with distilled water. This water was charged with carbon dioxid and the flask replaced in the culture oven for twenty-four hours. At the end of that time the enamel showed a chalky, rough decalcification that could be scaled off with the finger nail. The relative protective power, thus demonstrated, is exerted against lactic acid and various vegetable acids such as lemon, orange, grape, strawberry, rhubarb and cherry, the action of which formed the subject of a paper written by the author in March, 1908. Other tests reported before the New York State Dental Society meeting seemed to prove that enamel partly whitened and softened within a limited scope, might reharden automatically.

For instance, 1:1000 lactic acid and water at mouth temperature will cut tooth enamel in thirty minutes with a rough, white surface. A tooth placed in 1:500 lactic acid and some salivas will be unharmed. In this solution made with other salivas, after three or four days the enamel of a tooth, though perfectly smooth and to all appearances normal, can readily be pared to a slight distance with a lancet, and yet a 1:500 saliva and lactic acid solution has an extremely acid taste and instantly turns litmus brilliantly red.

Further tests and tables presented before the American Medical Association in June, 1912, and which will shortly appear in the American Medical Journal,

seem to prove with a fair degree of credibility that enamel rehardens from a partial softening due to the attack of an acid.

Thus, we see that the action of dentifrices and mouth antiseptics may have a very different action in different mouths. Salivas have different protective properties, and the same saliva in a mouth will show a great variation in its preservative power during various conditions of the system. It is possible that gout, diabetes, tuberculosis, arteriosclerosis, or even a bad attack of grip may reduce the vitality of the resisting agencies against deterioration and so make the use of a gritty powder much more destructive.

Experimental means of determining the strength of mouth antiseptics in vitro are subject to many fallacies. In the year 1904 I performed the following experiment: An old bridge, covered with bacterial deposits freshly removed from the mouth, was cut into small pieces, so that the bacterial deposits were undisturbed. These bacterial deposits were then submerged in various antiseptic solutions at mouth temperature for various intervals of time, at the end of which time the deposits were washed in sterilized water and test cultures made from them on blood serum. Peroxide of hydrogen made the best record of the antiseptics tested. But even with a 3 per cent. solution of peroxide of hydrogen and a submersion of five minutes, growths were nevertheless obtained on the blood serum. This test is significant inasmuch as it proves that to be effective, peroxide or in fact any antiseptic, must be applied in sufficient concentration for a sufficient time.

Clinically, peroxide of hydrogen gives excellent results in reducing oral infections. According to the experiments of Paul Bert and Reynard, it was found that all fermentations caused by bacteria were at once stopped by peroxide of hydrogen and the ferment was killed, while no effect was produced on enzymes and physiological ferments such as are found in the gastric juice and pancreas, so that it would practically have no effect on digestion, and yet it would inhibit the interfering action of micro-organisms.

Recent experiments in the Mulford laboratories under the supervision of Dr. A. P. Hitchens, indicate that a one per cent. peroxide solution has the same strength in inhibiting the growth of typhoid bacilli as a one per cent. carbolic acid solution. This is particularly interesting in reference to the antiseptic action of certain oxygen liberating dentifrices which claim to cleanse the mouth by the development of hydrogen peroxide. The idea is so excellent that it should be given encouragement by both pharmacists and the public at large, but none of the peroxide forming dentifrices according to the analyses that have come to my notice, have ever been able to develop more than .5 per cent. of free oxygen. This, as can be shown mathematically, cannot form more than 35 minims of the standard 3 per cent. peroxide solution for each hundred grains of dentifrice. Now, the amount of tooth powder capable of being put on an average tooth brush is seldom as much as ten grains, which ten grains or less of powder would have to be depended upon to deliver the antiseptic action to the mouth. These ten grains of tooth powder under the most favorable conditions would then deliver 3 1/3 drops of the official peroxide solution, no more. Three and a third drops, or even five drops, would be palpably inadequate to have any effect on the

bacterial masses of the mouth. Some of these preparations that claimed the power of sterilization by free oxygen, at times did not show the presence of free oxygen at all under analysis. This was due to some error in the manufacture, no doubt, but for practical antiseptics in the mouth it really made little difference, as three drops of peroxide of hydrogen would be so rapidly diluted and broken up by the oral tissues, that its antiseptic value in the course of half a minute could be hardly much more effective than so much distilled water.

Peroxide of calcium and peroxide of strontium, as recommended by many writers, are entirely too caustic to be used pure in the mouth. When placed in any quantity on the tongue they make a bad burn that lasts for days. However, the commercial preparation of peroxide of magnesium is bland, and, in my opinion, more useful. It comes diluted with magnesium hydroxide and carbonate, so that it yields from four to seven per cent. free oxygen, and is only soluble in about 15,000 parts of water (practically insoluble). This powder can be freely taken into the mouth in any quantity, liberating for every hundred grains enough oxygen to make 280 to 500 drops of a 3 per cent. alkaline peroxide solution. The commercial powder has just about the cutting grit of precipitated chalk, and when finely powdered, practically none at all. When the mouth is evacuated large quantities adhere to the interstices and necks of the teeth. This tendency may be turned to great advantage by the patient, for, while this powder is practically insoluble in water, it is readily converted into a soluble magnesium salt by any acid that may chance to be present.

But now let us discuss another phase of dentifrices that is even of greater importance than their carboic acid coefficient. All thoughtful dentists must have noticed that there is a terrible disease that affects the mouths of those who are particularly careful of their teeth, and this shows generally between the ages of forty and fifty by the complete disappearance of the enamel in ever-spreading foci on the anterior surfaces of the front teeth. This has been explained by many as arising from an acid diathesis of the system—gout, rheumatism, indican, and the absence of the sulphocyanates, not to speak of the acid calcium phosphates. Now, no one would deny that there may be a systemic cause for this disease, but not to my knowledge has there been reported one such case in the mouth of a patient who did not carefully use tooth powder and brush, and as the loss of enamel is confined almost entirely to incisors, canines, bicuspids and first molars, it would seem strange that a systematic disease would not attack all of the teeth of the mouth with a certain amount of impartiality. Therefore, I felt that, while the disease might be partly systemic, it did not have, of necessity, to be so.

In 1908 I published in the "Dental Brief" experiments showing the effect of grits on the teeth, proving conclusively that tooth powders even of chalk were largely instrumental in cutting the well-known smooth grooves in the necks of teeth that so frequently appear from second molar to second molar. Although these tests were judged only from their macroscopic effect and no measuring instrument of precision was used, and although they were faulty inasmuch as they did not reveal the full extent and significance of the destructive action of pumice, chalk, etc., they were the beginning of a long series of experiments of which this paper is a partial summary. I, therefore, undertook a rather voluminous series

of experiments to determine just what would happen to the enamel and cementum of a tooth when brushed with an ordinary tooth brush and saliva, when brushed with certain mouth washes, when brushed with certain standard proprietary dentifrices, and finally what happened when brushed with plain precipitated chalk.

The first test was made to determine what was the effect of brushing the enamel and cementum for ten minutes with a new brush and saliva alone. No enamel loss was discovered but a loss of $1/10,000$ of an inch of cementum was noted. But, as many other tests with plain saliva discovered only a polishing effect on the cementum, it was finally decided that the first test was an accident, and that the plain brush and saliva seemed to have no harmful effect on cementum or enamel that ten or twenty minutes brushing could determine. Six of the most prominent and best advertised dentifrices were tested in the same manner, a new brush being used with saliva and dentifrice for each test, the brushing being continued for ten minutes.

Dentifrice No. 1, in ten minutes test, cut off $1/10,000$ of an inch of enamel and from 23 to 83 ten thousandths of an inch of cementum.

Dentifrice No. 2, under similar conditions, gave a loss of $1/10,000$ of an inch of enamel and $26/10,000$ of an inch of cementum.

Dentifrice No. 3, gave no loss of enamel and a loss of $66/10,000$ of an inch of cementum.

Dentifrice No. 4, gave a barely measurable loss of enamel and $121/10,000$ of an inch of cementum.

Dentifrice No. 5, caused no loss of enamel and $73/10,000$ of an inch of cementum.

Dentifrice No. 6, caused no loss of enamel and $7/10,000$ of an inch of cementum.

The only reason the powders with grit are so popular, in my opinion, is because they make the front teeth presentable with a minimum amount of labor. In brushing their teeth some patients wash for high neck, not for low neck, and, while this is partly due to laziness, it is also due to the inefficient unscientific teaching on the part of the profession who recommend methods of tooth brushing that a simple inspection of the mouth will show do not cleanse the teeth.

Having investigated some of the prominent proprietary dentifrices, I next applied the same tests to the standard chemical substances that might prove of value in mouth prophylaxis. I found, as would be expected, that ordinary precipitated chalk would cut the cementum and enamel. Thinking there might be an excess of silica in it, I procured precipitated chalk from a standard chemical company, guaranteed to be free from silica. It seemed to cut more than the others. I next tried the peroxide of magnesium in reference to its grit, and found in its coarse state that it had a friction grit on the enamel and cementum somewhat less active than precipitated chalk, but nevertheless a decided grit. When, however, the peroxide of magnesium was ground in an agate mortar to impalpability, no such erosion was attained, thus showing that in peroxide of magnesium we can have a grit slightly less than chalk down to almost no grit at

all, and also a tooth powder that will give abundant oxygen, so as to have a real antiseptic action on the mouth. I next tried the frictional action of perborate of soda, mixed with saliva, on a tooth and was not able to note that the Brown & Sharpe micrometer showed any erosive action. This was particularly gratifying as perborate of sodium is a bland salt that can freely be placed in the mouth without caustic action, and liberates 9 to 10 per cent. of oxygen, and in the presence of any acid that may be present forms a strong alkaline peroxide solution.

When patients come to me with spots of dentin showing underneath the enamel of the front teeth, I prohibit them from using grit dentifrices of all sorts and recommend that they brush their teeth with perborate of soda alone. And when these patients have been carefully instructed in the proper act of brushing their teeth, perborate of soda seems quite able to keep the teeth clean without the aid of grits.

For patients that have healthy gums with no tendency to gum recession or thinning of the enamel, I use the following formula:

Peroxide of Magnesium (No. 200 inch sieve).....	60 parts
Perborate of Sodium.....	30 parts
Pulv. Saponis	10 parts
Flavoring to suit.	

Tested with the latest method of brushing for ten minutes, this powder gave no loss of enamel and from 3/10,000 to 9/10,000 of an inch of cementum. It will be noted from the beginning of these tests that where erosion was demonstrated the demonstration was beyond question; but sometimes the presence of erosion was not noted owing to the absence of proper measuring instruments or incomplete technique.

Mr. Heidelberg of Mulford's laboratory has furnished me with three specimens of chalk. No. 1 sample was made by precipitation in 50 litres of water with very slow precipitation. No. 2 was made in 1½ litres and was so concentrated a solution that in precipitating them slowly the drops of calcium chloride did not mix with the soda solution, both solutions being poured together quickly in order to produce a precipitate. The slow precipitate, as was expected, gave a larger crystal than the quick precipitate. The larger crystals of specimen No. 1 varied from 17 to 5.6 microns in diameter. The smaller crystals of specimen No. 2 measured 4 to 2 microns in diameter. Mr. Heidelberg sent me also a purchased specimen of precipitated chalk that had been ground much finer than the precipitated crystals, and yet these three specimens seemed about equally destructive of enamel and cementum. This would indicate that it is the chalk, not the preparation that is responsible for its gritty destructive action.

Mr. Beringer also supplied me with some specimens of precipitated chalk, silicious earth, precipitated phosphate of calcium, precipitated carbonate of calcium, and some calcined magnesium (light) that I might test them for their erosive action, hoping that they might be less harmful as the table of all the tests will show.

Erosion tests with a tooth brush on a natural tooth, brushed for ten minutes with saliva solution and various grits.

	Saliva Sol.	Number of Minutes	Loss of Enamel in 1/10,000	Loss of Cementum in 1/10,000
Dentifrice 1.....	Joseph Head	10	1	26
Dentifrice 2.....	Joseph Head	10	1	83
Dentifrice 3.....	Joseph Head	10	0	66
Dentifrice 4.....	Joseph Head	10	a trace	121
Dentifrice 5.....	Joseph Head	10	0	73
Dentifrice 6.....	Joseph Head	10	0	7
Dentifrice Dr. X.....	Joseph Head	10	1	33
Dentifrice Dr. Head (old formula)	Joseph Head	10	1	20
Dentifrice Dr. Head.....	Joseph Head	30	3	126
Various kinds of precip. chalk	Joseph Head	10	1-3	8-18-28
Magnes. Carbonate (precip.)..	Joseph Head	10	0	19
Precipitated Calcium Phosphate	Joseph Head	10	1	36
Tooth brushed with Saliva alone 8 times.....	Joseph Head	10	0	1 time-1 7 times-0
Magnesia Calcined.....	Joseph Head	10	1-3	27
Perborate of Soda.....	Joseph Head	10	0	0
Dr. Head's New Formula....	Joseph Head	10	0	3-9
Very fine Peroxide of Magnesia	Joseph Head	10	0	0
Saturated Solution Sodium Silicofluoride	Joseph Head	10	0	0
Hexamethylenamine	Joseph Head	10	1	1

Before closing, I should like to speak of some other mouth antiseptics that co-operate with the mouth enzymes rather than hinder them, although they do not (properly speaking) pertain to dentifrices.

Along these lines lies an interesting field for future investigation, but until the perfect enzyme is discovered, we should not fail to take advantage of the peroxide and fluoride antiseptics, since while they destroy bacteria chemically, they do not destroy the enzymes and ferments either of the mouth or of the stomach. And the fact that they do not destroy the enzymes, but seem to have a selective tendency for the pathogenic germs, may be one of the reasons they so rapidly restore inflamed oral tissues to a state of health, since instead of fighting the enzymes, they may assist them by reducing the number of bacteria against which the enzymes must contend.

In closing, let me briefly go over some of the points that might properly be emphasized. Tooth powders containing grits are harmful to both enamel and cementum and the patients should be taught to brush and cleanse the teeth without their aid. All stains that cannot be removed without the aid of tooth-cutting grit should be removed only by the dentist. Very finely powdered peroxide of magnesium, with 10 per cent. of soap and a suitable flavoring agent, will make a valuable antiseptic peroxide powder, and when left around the teeth at night will prove an invaluable antacid. For those who do not wish a semblance of grit in their powder, flavored perborate of soda can be used, both on the brush and in ten-grain tablet form as valuable mouth-wash tablets.

But I cannot bring this paper to a close without emphasizing the value of a saturated solution, in water, of sodium silicofluoride. It forms a 0.61 per cent.

solution. This may be held in the mouth for from two to five minutes, three times a day, by patients under treatment for pyorrhea. And while in some cases it does not retard the progress of tartar on the teeth, in many cases it most emphatically does, and as a supplement to scaling of the teeth, its healing effect on the inflamed gums is so satisfactory as to be little less than marvelous. It is non-poisonous and cheap, being readily purchased C. P. at 75 cents a pound, which is enough to make one-half to two-thirds of a barrel of mouth wash. And, above all, being a fluoride, it has the fluoride antiseptic qualities without affecting the porcelain fillings.

In recommending these new antiseptics for the mouth I wish to emphasize the fact that my observations as to their effect on the teeth and gums have been largely clinical and macroscopic. I believe that a close study of the first stages of enamel decalcification, such as occur before the enamel is roughened or whitened, will prove that many foodstuffs and ordinary therapeutic remedies are directly responsible for much of the general tooth deterioration of the present day. These new antiseptics of which I have spoken, I believe, are therapeutically valuable as an aid in treating the oral tissues, but whether in time they may prove to have undesirable action of a less harmful nature than the grit of chalk or the acid of lemon and carbon dioxide, no one is in a position to say. Nevertheless, as my next scientific work lies along this line, I hope to give more data on this important subject in the future.

DISCUSSION.

Dr. F. E. Stewart, Philadelphia: As you know, medicine is assuming a strong tendency towards the prevention rather than cure of disease, and dentistry is rapidly advancing in the same direction. The human mouth is a fertile field for the growth of bacteria unless it be kept in a cleanly condition. It is probable that the lodgement of infectious germs in the mouth and the favorable soil there for their growth is an important factor in the production and communication of infectious diseases. Though difficult to prove, nevertheless it is perfectly reasonable to believe that the germs of diphtheria, scarlet fever, measles and tuberculosis find the mouth an excellent place for continued existence. This has indeed been demonstrated in the case of diphtheria carriers, who, themselves immune to the germs, spread them broadcast as they travel about. Another important point is the influence of the condition of the mouth on the general health. The lowered resistance to disease from disturbances of nutrition, due to oral defects, and the pernicious physical state it causes are factors which must be taken into consideration. It is believed that enlarged tonsils are a predisposing cause of diphtheria, and it is well known that tonsillar enlargement is often concurrent with defective teeth.

Cavities in the teeth are culture fields for disease-producing microbes. In the mouth there is warmth and darkness, and these, together with decomposing food and decayed teeth, are most excellent conditions for germ life. Children and young adults are peculiarly susceptible to infectious diseases, and these are the persons in whom the teeth are most neglected. Dr. Jessens, of Strasburg, has revealed the startling fact that in his own state of the German Empire about 90 per cent. of the school children have defective teeth. An examination of 187,000 children in the public schools of New York shows that defective teeth more than double all other physical defects. There are at least 600,000 children in the schools, and in these statistics the physicians making the examination recognized only gross dental conditions. In the public schools of Boston the nurses find about 75 per cent. of the cases. Examination of the teeth of the children in Brooklyn develops the surprising fact that it is an exception to find a child with sound, normal teeth. These children are dental cripples. They are unable to properly masticate their food, which interferes with digestion, and, consequently, with full nourishment and proper growth and development.

On the other hand, it is a physiological fact that the teeth are integral portions of the body, and, as such, influenced by the state of the general health. Dr. A. Stayt Dutton in a naval paper on "The Cause and Prevention of Dental Decay," published in the Medical Press, London, England, June 7, 1911, states that from the result of his observations in England and Wales, he formed the opinion that the main cause of such a physical deterioration and decay of the teeth, as is present in British people, is due to the blood being defective in quality. He says that the likelihood of the correctness of this view is indicated by the results of the estimation of haemoglobin in the blood of the inhabitants in different urban and rural centers, which showed that the great majority of those from whom the specimens were taken had a percentage below 90, while in a large proportion it was below 80, and in many below 70.

Moreover, the effect of constitutional factors is a causative factor of decayed teeth. Tom's Dental Surgery states that almost every tooth was attacked during a case of rheumatic fever,—a complaint which quickly reduces the quality of the blood. This is said to be due to the secondary anemia which rheumatic fever occasions. Dutton believes that anemia is mainly responsible for the prevalence of caries. He also believes that unless the teeth have their normal share in the work for which they are made, they tend to atrophy or undergo degeneration, as in the case of other organs from disease. Therefore the condition of the food we eat plays an important part in the preservation of the teeth.

In this symposium we are endeavoring to place before you the subject of dentifrices and the proper care of the teeth and mouth. The exciting cause of caries is considered to be acids that are formed in the mouth by fermentation and putrefaction. These acids dissolve the enamel of the teeth, thus allowing the entrance of micro-organisms which cause disintegration. It is, therefore, assumed that the proper dentifrices should be alkaline in reaction to neutralize these acids, and also contain materials capable of scouring from the surface of the teeth the detritus from the food remaining on or between the teeth after meals. In addition to the food detritus, there is the peculiar formation known as tartar, even small deposits of which are difficult to remove from the teeth. It is believed by many that a tooth-powder containing such substances as pumice, for example, should be used, at least occasionally for removing the tartar.

You have listened to two notable papers this evening, one of which clearly proves that we are not right in our ideas regarding the scouring of teeth. That it is easy to destroy the enamel by keeping it clean, and, therefore, free from decay, has been thought of by some of us a long time ago, but we have not been in position to protest. Dr. Head seems to have proved beyond all question that certain dentifrices believed to be not only harmless but beneficial, are, in fact, very deleterious. We find ourselves in the position of the Turkish brigade who mistook another brigade of the same army for the foe and made a desperate and disastrous attack upon it. In our attack upon disease-producing bacteria in the mouth, let us not make the mistake of attacking the teeth themselves. Here is an excellent field for a pharmacist to do some original work. Dr. Head outlined a plan for making tests of substances used for toothpowder that any pharmacist can employ and know that what he dispenses for cleaning the teeth will not injure them.

We have listened to Professor Broomell's paper and learned that the pharmacist has a serious responsibility in his relations to the public and the dental profession in such matters. We have learned the reason why the pharmaceutical profession should cooperate with the dental profession in the onslaught against causes of disease. When the enormous importance of the teeth as a factor in preserving the health is considered, what excuse is there left for physicians, pharmacists, and dentists to neglect their responsibilities in this matter?

It is very desirable that we should have a free discussion of this important subject of dentifrices and the proper care of the teeth and mouth from the point of view of the physician, the dentist, and the pharmacist. We speak here to an audience far greater than that actually present. Our papers and discussions are published in the JOURNAL of the American Pharmaceutical Association. Our official organ not only has a large circulation, but exercises an influence far in excess of the size of its circulation list, and in no better way can we protect the public in relation to the care of the teeth than by discussing the subject at this meeting,

and thus placing before the pharmacists of this country the important data we have now under consideration.

There are in the United States about 35,000 practising dentists, about 40,000 retail druggists, and about 150,000 physicians. In spite of this army of practitioners there yet remains the fact that the masses are still woefully wanting in proper appreciation of the value of the teeth, and the majority (a very large majority) is ignorant of the dangers incident to their neglect.

SNAKE BITES.

One thousand two hundred and forty-four human beings died of snake bites in the Central Provinces of India last year (says the *Standard*). It is seldom that a European is hurt by a poisonous snake, because he wears boots and trousers; but the native, with his naked limbs, is always subject to the attacks of a hurt or frightened reptile. The most ready method of treatment has hitherto been the application of potassium permanganate, but it is now very doubtful whether this has been of any value. Colonel Dennys, Inspector-General of Civil Hospitals, has made a report on the history of the treatment, and has found that very few so-called snake bites can be properly certified. The patients have no doubt been bitten, but there is seldom any evidence showing that the snake has been a venomous one. A harmless snake may have inflicted the wound, and some special "cure" may get the credit of having saved a life that was never in danger.—*Pharmaceutical Journal & Pharmacist*.

DOES IT PAY TO ATTEND ASSOCIATION MEETINGS?

Does it pay the druggist for the time, trouble and expense involved to attend the meetings of his State or national association? The question might just as well be asked if it pays to eat, drink and sleep and keep on living; the answer depends upon what one gets out of life and what is considered satisfactory payment for the trouble of keeping alive; so it is with attendance at association meetings. As a people we Americans are too much inclined to estimate the value of efforts and things by a money standard; that is, if asked if a certain thing "pays" we base our answer on the return in dollars and cents. Of course dollars and cents are very useful and absolutely necessary in this present state of civilization, but they are only a convenient means of exchanging work and ideas for food, clothing, etc., they are not a measure of value for the real things that make life worth living, and the saddest mistake a man can make is to set up money as a standard by which to measure the value of his work and of himself. But, if there are any pharmacists who are so bound by circumstances that they must measure every act by the return in dollars and cents, no better investment can be made than that involved in attending association meetings. The man who cannot get new ideas and learn better ways of doing things by associating with the men who are doing things, in the informal ways of association meetings, is hopeless.—*American Druggist*.

Reports of A. Ph. A. Committees

REPORT OF THE COMMITTEE ON WEIGHTS AND MEASURES.

GEO. C. DIEKMAN, NEW YORK, CHAIRMAN.

During the past year much has been accomplished in the matter of popularizing the metric system of weights and measures. Here in the East, physicians are employing the metric system in prescription writing to a greater extent than ever before.

Medical schools and colleges are at least bringing this system to the attention of their students, something that until recently was not the practice, excepting in some instances.

Students of the medical schools were taught the doses of the various preparations in both systems, it is true, but they rarely understood the simplicity of the metric system. The simple relations of this system of weights and measures were not explained to them, and consequently only a very limited number of medical practitioners employ this system in prescription writing.

A teacher at a medical school when asked why so little attention was given to this matter, stated that the student was expected to know all about weights and measures, including those of metric origin, before entering upon his studies, and that the curriculum of the school did not provide any time for this, from the medical standpoint, very unimportant matter.

Every effort should be made to induce the teachers in medical schools to adopt the metric system in their teachings, so that in time we may hope that the physician will be more familiar with its terms, and no longer consider it unimportant.

It is hopeless to expect the older practitioner, who during the entire course of his practice has written his prescriptions in the terms of the ordinary system, to become a convert to the metric system. He thinks in grains and ounces and will always continue to do so.

How unimportant the metric system seems to many of the teachers in the medical schools, may be illustrated by the following:

One of these teachers in explaining the metric system to an inquiring student, especially as related to prescription writing, stated as follows:

First: The gram is always to be considered the equivalent of 16 grains.

Second: A two-ounce mixture is the equivalent of 60 cubic centimeters.

Third: A two-ounce mixture equals 16 teaspoonfuls.

Therefore, if you desire to prescribe a given drug in one-grain doses, write for one gram, if in one-half grain doses, write for one-half gram, etc. The result of

this teaching was that the student, afterward the practitioner, was able to write, according to the rule laid down, a two-ounce mixture in metric terms. When he desired to prescribe a three or four-ounce mixture, the rule had to be changed, and this being too troublesome, three or four-ounce mixtures were written in the ordinary terms.

Propaganda work endeavoring to bring about more harmonious relations between the members of the medical and pharmaceutical professions, has done considerable to bring the metric system before the practitioner. This movement has to a great extent popularized the U. S. P. and N. F. preparations in many localities. Physicians have had their attention directed to the manner in which these preparations are manufactured, thus becoming acquainted to a greater or lesser extent with metric quantities and terms. Stating the average dose in metric terms, as is done in the U. S. P., has also been of some assistance.

There remains, however, still much work to be done if this system is to finally become our universal standard. It must not be forgotten that there are those who oppose its adoption most strenuously.

This missionary work for the popularizing of the metric system will have to be done among a certain class of pharmacists, as well as among physicians. I am afraid that some of our schools of pharmacy do not give the proper time and attention to the study of this system. I have found quite a number of pharmacists, some of them graduates, who, rather than provide themselves with an accurate set of metric weights and measures, prefer to convert, usually with the assistance of a table, metric terms into their equivalent in the other systems. Not only is this the case when compounding prescriptions, but holds true in manufacturing operations as well.

The pharmacist who when manufacturing 1000 grams of liniment of camphor, U. S. P., would rather employ 7 ounces av. and 24 grains of camphor and 28 ounces av. and 96 grains of cottonseed oil, than 200 grams of camphor and 800 grams of cottonseed oil, is still with us.

I believe that much good would result, if the topic of popularizing the metric system were more frequently discussed on occasion of pharmaceutical meetings, particularly those of the local branches of the American Pharmaceutical Association.

Schools of pharmacy likewise should more energetically advocate the use of the metric system. In some of the schools the student is supplied with metric weights and measures, which he is obliged to use, as occasion requires, during his course of instruction.

The cost of such weights and measures need not be prohibitive, as they are not required to be of the expensive type. I have never found a student who objected to the extra outlay, when the necessity for it was made apparent to him. After graduation the student takes the weights and measures with him, and if he has been at all careful in their use, they are still serviceable. I know of an instance where a young man obtained a position as clerk soon after graduation, and taking his weights and measures to his quarters, which adjoined the pharmacy where he was to be employed, was surprised to find that the weights and measures he owned

were the first metric ones that had ever been in such close proximity with this particular establishment.

More attention should also be given to the care and preservation of weights. Particularly such as are employed in prescription compounding should be the objects of special care. Such weights should be restandardized as occasion requires, or new ones, which are accurate, procured. I have note of an instance where a drachm weight was the equivalent of only 55.4 grains, and a scruple weight the equivalent of 18 grains. Other such instances are perhaps not at all uncommon.

The authorities all over the country seem to have awakened to the necessity of a more careful supervision and examination of weights and measures employed in ordinary commercial transactions. Here in New York, during the past winter, on occasion of a pure food and drug exposition, the Bureau of Weights and Measures exhibited a very large number of weights, measures and scales, which had been confiscated. In practically every instance gross fraud was being intentionally practiced, and much ingenuity was employed to make the fraudulent practices seem honest.

In conversation with one of the officers in charge of this exhibit, it developed that the pharmacist was about the only one who did not indulge in these fraudulent practices. He stated that he had examined the scales and balances employed in a number of pharmacies, and had found them all standard. In some cases he had discovered a slight deviation in weights, but in no single instance did any evidence of fraud appear. Prof. Johnson, a member of this committee, reports a similar condition for the West.

WAR AS A STIMULUS TO PREVENTIVE MEDICINE.

In the splendid address with which President Taft opened the International Congress of Hygiene and Demography, he made a very significant statement, which contains food for thought. It was this: The greatest impetus preventive medicine has ever received in this country, and perhaps in any country, came from the Spanish-American War. What we have learned concerning the causes of disease and its prevention, as a more or less direct result of that war, has revolutionized sanitary medicine. If we have gained nothing else, the knowledge thus obtained is well worth all that the war cost us.

This is a strong statement—but isn't it true? As a direct result of the Spanish War we have the development of the mosquito-theory of the transmission of yellow-fever; the eradication of yellow-fever from Cuba; the demonstration at Panama of the possibility of eradicating malaria in the tropics *and at home*; the practical solution of the problem of typhoid fever in military camps and the evolution of preventive vaccination against typhoid fever; and a modification of quarantine methods for plague, cholera, smallpox, and all the rest, with wonderful increase in efficiency.—*American Journal of Clinical Medicine*.

Report on the Progress of Pharmacy

For the Year 1912

(Sixth Installment.)

Cultivation of Drugs: Suggestions Regarding Its Possibilities with Particular Reference to the British Possessions.—J. H. E. Evans contributed a highly interesting paper at the 1912 meeting of the British Pharmaceutical Conference, written with the purpose of awakening greater interest in the cultivation of drugs in the British possessions. He says that while the government departments in the United States of America, Germany, and elsewhere foster the cultivation of drugs, what advancement is made in Great Britain is almost entirely the result of private enterprise. The facts to which he draws attention in particular are in brevity the following: The present sources of supply of crude vegetable drugs are in quantity and quality, restricted in area, and thus dependent on forces which cannot be controlled—such as weather, time and method of collection, available labor, carelessness in methods of preparing for market. He considers that the influence of the natural causes might often be controlled, both as regards quantity and quality, by systematic cultivation, but such cultivation must be scientific and organized, and some of the conditions to be observed in such cultivation are discussed. He further considers it quite possible that much of the vegetable materia medica might be cultivated in the British Colonies, and that improved methods of transportation would encourage this object. Finally, the author mentions a few products which are at present cultivated more or less successfully: *Calumba*, in Ceylon; *Eucalyptus* and *Patchouli*, in the Tropics; *Belladonna*, in England, France, and America; *Cocoa*, in the West Indies, Ceylon, and Zanzibar; *Kolanuts*, in the Tropics generally; *Cinnamon*, in Ceylon; *Ginger*, in Japan; *Tumeric*, in the Tropics; *Ipecacuanha*, in India; *Valerian*, in England, Germany, and America; *Manna*, in Sicily; *Benzoin*, in the Straits Settlements, etc.—From Brit. Pharm. Conf., 1912; through

Pharm. Jour. and Pharmacist., Aug 3, 1912, 125.

Drugs of German East Africa.—Dr. K. Braun in "Der Pflanze" describes 73 plant products sold in native markets and Indian bazaars of German East Africa giving native name, uses and method employed. Among those of pharmaceutical interest are the following aromatics: Amber, ajowan from *Carum copticum*; the fruit of *Cuminum Cyminum*, cinnamon, nutmeg, curcuma patchouli and black pepper, while the following are used as medicine: The seed of *Nigella indica* as febrifuge and stomachic; sulphur (in Sesame Oil) for skin troubles; myrrh from *Commiphora Abyssinica* as application to wounds; blue stone (with bruised leaves of *Vigna sinensis*) used as caustic paste for cancerous growth; asafœtida, chiefly as an amulet; senna as purgative; dill (in watery paste) for rubbing the breast in fever; ginger (in watery paste) for rubbing forehead in headache; foenugreek (decoction) in gonorrhœa; black antimony as cosmetic. Unfortunately, while the writer occasionally mentions that a certain article is imported, he makes no clear distinction, especially as far as spices are concerned, as to which are native grown.—Schw. Wschr. f. Chem u. Pharm. L (1912), No. 20, 289.

H. V. A.

Japanese Aconite Root: Botanical Source. At the meeting of the British Pharmaceutical Conference, 1912, Mr. E. M. Holmes contributed an exhaustive research regarding the botanical source of Japanese aconite root, which, as is well known, is referred in most text books to *Aconitum Fischeri*. The results of his research, which is given in great detail, lead him to the belief that this reference is incorrect. He says there is so little known of the aconites cultivated for ornament or medical use in Japan that it is not astonishing if an error should have occurred.

Even the illustrations of *Aconitum Fischeri* in native Japanese works on botany appear to represent different species, and the specimens in the British national herbaria apparently also represent several species under one name. The author's present researches, however, leave but little doubt that the bulk of Japanese aconite root of English commerce is the product of *Aconitum uncinatum*, var. *Japonicum*, Regel, and that possibly mixed with it occur the roots of "Dzuru or Tsuru torikabuto," which has been identified by Dr. Shimoyama as the *Aconitum volubile*, Pallas. Either to this plant or to *Aconitum Napellus*, apparently, belong the roots with a stellate medullium found in Japanese aconite. But while there seems to be some confusion between the two twining plants, *A. volubile* and *A. uncinatum* var. *Japonicum*, there is no doubt in Mr. Holmes' mind that the Japanese aconite is derived from both these species.—Trans Brit. Pharm. Conf., 1912; through Pharm. Jour. and Pharmacist, Aug. 3, 1912, 147.

Agar: Microscopical Determination in Jams, Jellies and Similar Fruit Products—Improved Method.—In place of the customary ashing or ashing-methods, Albert Schneider finds it more satisfactory to dissolve about 10 gm. of the substance in 200 cc. of distilled water and centrifugalize for half an hour; decant the supernatant liquid and examine the residue microscopically. If agar has been present, characteristic agar diatoms, undissolved agar fragments and remnants of undissolved parasitic algal forms are found. If the usual ashing or ashing-acid process is used, no matter how carefully, many of these characteristic diatoms are comminuted and destroyed. One or more diatoms and one or more algal remnants in one ordinary slide mount (or 5 to 20 fields of view) is conclusive evidence that agar has been added but it is not possible to determine accurately the amount present. It is essential that only distilled water be used making the examination.—Pacific Pharm., June, 1912, 36.

C. M. S.

Aralia Japonica: A New Glucoside from the Leaves.—According to L. Danzel, the fresh leaves of *Aralia Japonica* (the *Aralia sieboldii* of horticulture) contain glucose and a glucoside, aralin, which is insoluble in water, and is not hydrolysed by emulsion. They contain no water-soluble glucoside.

Aralin is extracted by digesting the material in boiling alcohol (96 per cent), filtering while hot, and diluting with water to about 85 per cent of alcohol. On standing, the impure glucoside is thrown down. It is collected, dried and washed with ether, then further purified by re-solution in hot alcohol and reprecipitation. It is finally purified by recrystallization from hot 96 per cent alcohol. It then occurs as a colorless transparent crystalline mass; melting at 260° C.; at 52.5° in alcoholic solution; almost insoluble in most organic solvents except strong alcohol and acetic ether. It contains no nitrogen. When hydrolysed with dilute sulphuric acid it forms insoluble aralidin and glucose. Aralidin separates from alcohol as a very hard, white crystalline mass, melting at 246 to 248° C. It is an acid, combining with alkali carbonates. Aralin appears to be closely allied to hederin, the glucoside of ivy, which belongs to the same natural order.—Journ. de Pharm. et Chim., 1912 (5), p. 530.

Bael Fruit: Presence of Starch.—In the microscopical examination of a powder believed to be entirely or in part composed of bael fruit, J. C. Shenstone was struck with the presence of some tissues which, while resembling the tissues of bael fruit in other respects were loaded with starch grains. Upon referring to descriptions of bael fruit by such careful observers as Flückiger and Hanbury, Dymock, Warden, Hooper, etc., no reference was found to starch grains in bael fruit. The author therefore considered it desirable to examine a number of samples of the fruit, and discovered that whilst bael fruit is mostly composed of tissues devoid of starch, specimens often occur, the cells of which are laden with starch grains. These starch grains are characteristic, being oval compound grains, varying considerably in size, from 0.0063 to 0.013 mm. and 0.005 to 0.01 mm. in breadth. The grains escaping from the cells usually divide in halves along their narrow diameter, each portion resembling a half-egg in shape. These grains respond to the usual chemical and optical tests for starch. Bael fruit offered upon the market varies considerably in size, from 1.5 to 3.5 inches. The specimens in which starch-laden tissue was discovered were from 2.5 to 3.75 inches in diameter. It is likely that the fruit is gathered at varying periods of unripeness, and should subsequent examination show that starch grains are only

found in fruits of a certain stage of growth, we may conclude that starch is deposited to provide nourishment for the final effort in the ripening of the fruit.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ. and Pharmacist, Aug. 3, 1913, 146.

Japanese Chillies: Botanical Source.—In a paper read before the British Pharmaceutical Conference, 1912, Mr. E. M. Holmes records the results of his investigations regarding the botanical source of the bright red Japanese chillies that have been imported into England during recent years. They are of a brighter color and cleaner appearance than any other in the market, but are deficient in pungency, so that they are preferred for garnishing or for adding to pickles, though unsuitable for making cayenne pepper. After describing the various types of these chillies met with in England, Mr. Holmes remarks that the evidence obtained from his inquiries points to the small Japanese chillies, called "Takanotsunui," as being derived from either *Capsicum conoides*, or *C. frutescens*, or both, and that the slightly larger chillies, called "Tenjuku namori," are derived from a form of *Capsicum fastigiatum*, RL, for which he proposes the name *Capsicum fasciculatum*.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ. and Pharmacist, Aug. 3, 1912, 149.

Dicrvillea Florida: Narceine Among the Proximate Constituents of the Fruit.—Lowell E. Dawson has made a proximate examination of the fruit of the "Bush Honeysuckle," *Dicrvillea Florida*, a shrub of China and Japan, cultivated in our gardens, the fruits examined being gathered at Lisbon, Iowa. The dark red berries, resembling ripe currants in color, are very bitter and produce nausea when a small quantity are eaten. Two berries grow on a stem. They are quite juicy, and the yield is abundant. They yielded 38.04% of sugar which was identified as fructose; 3.75% of fixed oil, difficult to saponify and seemingly belonging to the castor oil group; proteins corresponding in quantity to 2.86% of nitrogen; and 3.5% of ash. The acid tests revealed the presence of both tartaric and citric acid, but the most interesting observation was the presence of an alkaloid which the author regards as being

author seem to confirm this assumption. While the quantity of this alkaloid has not been determined, it may exist in paying quantities in the fruit if it should prove to be narceine.—Chem. News, July 12, 1912, 18-20.

Digitalis: Relative Activity of Leaves Gathered at Different Times in the Year, of Leaves and Petioles, Etc.—At the meeting of the British Pharmaceutical Conference, Gordon Sharp, M. D., and F. W. Branson reported the results of an investigation undertaken with the object primarily to ascertain if a tincture of digitalis made with 90 per cent. alcohol remained active for a longer time than the ordinary B. P. preparation, made with 60 per cent. alcohol. Incidentally also, other points kept in view refer to the relative activity of the petioles, and of the tinctures prepared from leaves gathered at different times of the year, to leaves growing wild, or partially cultivated, and to leaves from plants which had flowered or had not flowered. The results showed:

(1) That tinctures prepared from the petioles were only about one-half the strength of those prepared from the leaves.

(2) That a potent preparation can be produced from both wild and half-cultivated plants.

(3) That leaves gathered in November are as active as those gathered in August.

(4) That leaves collected from plants which had flowered and from plants which had not flowered were equally toxic.

(5) That there is no apparent advantage resulting from the use of the stronger alcoholic menstruum. Indeed, the results are rather in favor of the 60 per cent. menstruum, since of the nine tinctures prepared from different kinds of leaves with 60 per cent. alcohol, seven were up to the standard at the end of twenty months, whereas only four of those made with 90 per cent. alcohol came up to the standard.

At the end of twenty-eight months only one tincture in each set had retained its standard, both having been prepared from leaves of partly cultivated plants, collected in October and November (1909) respectively.—From Brit. Pharm. Conf. 1912; through Pharm. Journ. and Pharmacist, Aug. 3, 1912, 131.

Narceine, although he has not succeeded in isolating this alkaloid in a pure crystalline condition. The tests described by the

Dulcamara: Chemical Composition.—G. Masson, commenting on the method of the French Pharmacopœia of preparing extract

of dulcamara, observes that however completely the extraction with water has been effected, the drug residue, dried and extracted *de novo* with boiling 95 per cent. alcohol, yields a notable amount of extract. From its green color this was thought to be chlorophyll, which the extract resembles in many ways, but a closer examination showed that chlorophyll was in reality present only in very small amount, and that it consisted largely of saponoids. It is therefore recommended that the drug should be extracted with aqueous alcohol, and the author goes on to show that dulcamarin is not an immediate principle, but a glucoside, resembling and at the same time differing from the solanine of the potato. Besides inactive bodies, e. g., albuminoid, gummy, and saccharine matter, the active principles are stated to be three in number, namely: (1) A non-glucoside saponoid, *dulcamaretic acid*; (2) A glucosidic acid saponoid, *dulcamaric acid*; (3) An alkaline glucoside, *solaceine*. The "solanine" of dulcamara in solution in hot concentrated alcohol deposits from it in the form of a jelly, and in this respect it differs from the solanine of the potato as well as in its product of decomposition. The amount of solaceine found in the plant was an average of 1 per cent.—Bull. Sci. Pharmacol., May, 1912, 283.

Swiss Ergot of 1911: Quality.—C. Hartwich describes the ergot collected in the Canton of Luzern in 1911 and states that the dry summer produced unusually large sclerotia, some specimens measuring as much as 7.7 cm. The last Swiss Pharmacopœia directs rejection of all ergot longer than 25 mm. and that on the presumption that small ergot is richer in alkaloid than is the large. Assay of the large ergot of 1911 showed 8.41% water, 15.48% fat, 2.68% ash and 0.096% alkaloid. While this alkaloidal content is less than the average of commercial ergot—e. g., Caesar and Loretz's figures of 1906, 0.027 to 0.364%—Keller's figures of the Swiss ergot of 1893 showed an alkaloidal content of 0.095%—exactly that of the large ergot of 1911—this seeming to show that size did not affect alkaloidal strength.

In the crop of 1911, were found sclerotia that were yellow white, which even spectroscopic examination showed absolutely devoid of the violet coloring matter sclererythrine. This bleached ergot has been called by the collector, Dr. Sidler, *leuco sclerotium*,

and while the amount collected was insufficient for an assay, superficial examination gave distinct evidence of alkaloid. The paper concludes with reference to the description of Swiss ergot and illness produced by ergotized rye given in a book of 1717 and the fact that the common name ergot in Switzerland is "Wolff-Zähne," "Roggenbrand" and "Turf," the German "Mutterkorn" not being used by the German-speaking peasants of Switzerland.—Schu. Wschr. f. Chem. & Pharm. L (1912), No. 19, 281. H. V. A.

Ipecacuanha: Glucosidal Constituent.—Some time ago the observation was made by H. Finemore and Dorothy Braithwaite that when ether is added to a concentrated alcoholic extract of Johore ipecacuanha a crystalline precipitate was produced, which proved to be a glucoside, and this precipitate the authors have since obtained (presumably of the same identity) from different specimens of Brazilian (Matto Grasso and Minas) ipecacuanha. In view of the limited knowledge regarding the non-alkaloidal constituents of the drug, the authors have subjected this glucoside, for which they propose the name,

Ipecacuanhin, to nearer examination. When purified by recrystallization it forms tufts of colorless needles, sparingly soluble in cold, but readily soluble in hot water; it is practically insoluble in ether, sparingly soluble in chloroform, acetone, and ethylacetate, but readily soluble in petroleum ether. It appears to be that constituent of ipecacuanha which gives a green color with ferric chloride, the green color being changed to a reddish-purple on addition of sodium carbonate. Ipecacuanhin contained in the root to the extent of at least 0.4 per cent. and is apparently innocuous, having been introduced intravenously into rabbits in quantities up to 1 gm. without apparent effect. It contains no nitrogen, and is possibly identical with the *ipecacuanhic acid* described by Willick (1850) as an amorphous product from ipecacuanha, to which he assigned the formula $C_{14}H_{13}O_7$. The authors find that ipecacuanhin may be hydrolyzed either by means of dilute acid or emulsin, and that it is a B. glucoside as revealed by the glucosazone obtainable by suitable treatment.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ. and Pharmacist, Aug. 3, 1912, 136.

"Lawang" (or Massoi) Bark: Yield and Properties of Volatile Oil.—E. W. Mann has distilled and examined a volatile oil, in a yield of 0.5 per cent. from a bark shipped from the Dutch East Indies, where it passes by the name of "Lawang," but which submitted to Mr. E. M. Holmes was indentified as being one of the barks passing under the name of "massoi-bark," and doubtless derived from some species of *Cinnamomum*, or *Litsea*, or allied genus. The oil, which is heavier than water, possesses a striking odor recalling nutmeg, sassafras, and cloves, and gave the following contents: Sp. gr. at 15.5°, 1.0104; rotation (in 100-mm. tubes) at 20°—6.97°; refract. index at 15.5°, 1.5111 (at 20° = 1.5095); acid val., 1.15; sapon. val., 43.02; ester val., 41.87; sapon. val. after acetylation, 121.91. Readily soluble in 2 vol. of 80 per cent. alcohol.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 145.

Tragacanth Gum: The Volatile Acidity Compared With That of Indian Gum.—F. O. Emery in comparing volatile acidity of gum tragacanth with that of Indian gum (*Sterculia urens*), found that the volatile acidity of the two was fairly constant: sufficiently so, to serve as a means of detecting or estimating the purity or quantity of either, alone, or in admixture. The volatile acidity of Indian gum was found to be nearly 7.5 times as great as that of tragacanth. The volatile acidity is estimated as acetic acid by treating a 1 gm. sample with water and phosphoric acid, first in the cold, then by boiling under reflux condenser, after which the sample is subjected to steam distillation and the acidity of the distillate titrated with N/10 KOH. The acidity found on gum tragacanth ran from 2.15 to 2.20 per cent.; Indian gum gave 15.79 to 15.97 per cent. acetic acid.—*Journ. Ind. & Eng. Chem.*, May, 1912, 374. L. A. B.

Commercial Proteins: Suitability for Pharmaceutical Purposes.—In a paper read before the British Pharmaceutical Conference, 1912, F. W. Crossly Holland calls attention to the more extended use during the last few years of protein substances in various connections, and that at the present time, judging by the attention which is being paid to the properties and possibilities of these substances, we are brought to realize that the near future will probably witness a much wider utilization of the various commercial

proteins now offered on the market. The arts have profited by the investigations of proteins, inasmuch as a good deal of this work has resulted in its practical application to the production of preparations into which protein substances largely enter. This wide employment of protein substances in the arts has led to the inquiry into their suitability for extended employment in pharmacy; and while pharmaceutical uses of proteins are at present restricted, there is every indication of a more extended use owing to the greater interest which is being shown in protein foods and protein compounds of therapeutical and pharmaceutical significance, and prescriptions of the present day support this view. Natural difficulties and disadvantages probably account for the comparatively small position which proteins have hitherto held in pharmacy; but difficulties apart, there is a real and increasing call from the progressive faction of medical men for pharmaceutical protein products, and the author's description of the nature and characters of the available products is therefore both timely and valuable. It must suffice here to simply mention the proteins discussed by the author, these being both of vegetable and animal origin, leaving the detailed description for consultation in the original.

The Vegetable Proteins offering pharmaceutical interest are represented by wheat protein, soja bean protein, and castor oil bean protein. There exist also proteins prepared from various leguminous seeds, but these have no particular interest other than as adulterants of higher priced proteins.

The Animal Proteins which claim pharmaceutical interest are: Egg-albumin, gelatin, serum-albumin, and milk-casein. Animal proteins have found a limited use in pharmacy as emulsifying agents, but—notably the milk-casein—are capable of greater use in pharmacy.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 154.

Proteins and Amido Acids: Action of Light and Hydrogen Peroxide.—J. Eifront observes that the changes which the proteins and amino-acids undergo by the photochemical action of light are similar to those caused by protolytic bacteria and aminases. The action of sunlight is due in the first place to the formation of hydrogen peroxide, which in time completely decomposes the

protein molecule with formation of ammonia and nitrates. In alkaline solution hydrogen peroxide acts on proteins and amino-acids at the boiling point and completely removes the amino-groups—97-99 per cent. of nitrogen is found as ammonia in the distillate, the remainder being present in the residue in the form of nitrates. The primary products of the reaction are ammonia and oxyacids, the latter then being more or less completely oxidized to volatile fatty acids and oxalic acid.—*Compt. rend.* 154 (1912). 1111.

Blood: Chemical Detection, Especially in Blood-Stains.—Prof. Edward Schaer communicated a short paper to the British Pharmaceutical Conference in which he draws attention to the existence of several older and newer absolutely correlative chemical reactions which, under the same conditions, invariably give analogous results in the presence of blood and also the means of easy and thorough solution of blood in blood-stains. For the detection of blood he mentions that of the many reactions that have in the course of time been proposed almost all are based on the curious quality of the coloring matter of blood, for the first time thoroughly studied by Schoenbein, to act in a catalytic way like a "peroxydase" upon hydrogen peroxide in presence of certain oxidizable substances readily forming some deeply colored oxidation products, and the author mentions and describes five reactions coming under this head.

Regarding the different methods for extracting blood from blood-stains that have been proposed, Professor Schaer says that after an experience of many years he is convinced that no dissolving liquid is more adapted to this purpose than a concentrated solution of chloral hydrate (70 to 80 per cent).—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 159.

Trypsin: Measurement of Its Relative Activity.—A. R. Smith observes that the standardization of trypsin, to the presence of which enzyme pancreatin owes its proteolytic properties, is of importance both from medicinal and commercial points of view. The tryptic activity of a substance is shown by its action on some protein substratum, such as a slightly alkaline solution of casein or egg-albumin under certain conditions. The author finds the method of Sorensen as

being best adapted for this purpose, since by its use it is possible to follow the course of proteolysis by titration, and has applied this method to measure the relative activity of pharmaceutical preparations. The method as carried out upon five samples of pancreatin obtained from well known manufacturers, and also on two samples of "trypsin," is described in detail, and the results exhibited in the form of a table plainly indicate its utility for the purposes of standardization.—*Trans. Brit. Pharm. Conf.*, 1912; through *Pharm. Journ. and Pharmacist*, Aug. 3, 1912, 137.

Bacterial Vaccines: Characters and Preparation.—Introducing his subject with a reference to the revolution in medical practice caused by the successful use of such animal products as thyroid extract, adrenine, etc., Dr. Lan Struthers Stewart observes that bacterial vaccines, though not so well known, have a much wider field of usefulness than that of other organic substances, and they bid fair to oust all other remedies in the treatment of diseases of bacterial origin. Two types of vaccines are used, autogenous and stock, the former being made from the organism causing the patient's disease, and the latter containing several strains of one bacterium cultivated from different sources. The balance of opinion seems to be in favor of the autogenous vaccine. It is usual in cases of extreme urgency to use an appropriate stock vaccine for the first inoculations, the minimum time for the preparation of an autogenous vaccine being from twenty-four to forty-eight hours. Stock vaccines of staphylococci are very satisfactory on the whole, though occasionally a case is met with where an autogenous vaccine is necessary. On the other hand, with *Bacillus Coli* it is usually necessary to prepare a fresh vaccine for each case. The first step towards the preparation of a vaccine is the collection of material from the patient. This may consist of blood, pus, sputum, urine, or faeces, but it must be collected with strict asepsis. It is important that, whenever possible, the vaccine should be made from a primary virulent culture, and as in a general way an organism on sub-culture becomes less virulent, it is essential to keep as near to the primary culture as possible. Every care must be taken to make sure that the true cause of infection is found. The author describes the methods of preparing the vaccine, and of the bacterial

emulsion in detail, which vary according to conditions and kind, and gives also the methods employed for their standardization and sterilization. These vaccines are generally supplied in small glass capsules, hermetically sealed, and labeled with the number of organisms contained in 1 cc. of the emulsion.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ and Pharmacist, Aug. 3, 1912, 128.

Potent Tinctures: Keeping-Properties Determined by Physiological Tests.—In a paper read before the British Pharmaceutical Conference, Dr. Alexander Goodall, maintaining that it is unjustifiable to dispense such potent tinctures as Tincture of Digitalis, Strophanthus, or Squill, which have not been tested, describes and gives the results of the determination of the potency and keeping qualities of a large number of each of the tinctures during several years by physiological tests. These tests were carried out upon male frogs, usually about 20 grams in weight, the potency accepted as normal being the amount of a standard tincture required to kill a frog of 20 grams in four hours. The results are shown in the following summary:

Tincture of Digitalis.—Of twenty-three samples made by manufacturers of repute, eleven showed a departure from the normal potency, six being below the average and five above the average of potency. As regards keeping properties, the tincture is not reliable after a year.

Tincture of Strophanthus.—Four of twenty-one samples showed a deviation from the normal potency, two above and two below the adopted standard. Similarly fourteen samples of tincture prepared according to the B. P. 1885, showed three deviations above and three below the normal potency. The official tinctures retained their full activity for at least three years. Those of the B. P. 1885, only two years.

Tincture of Squill.—Of ten samples examined, only five conformed to the standard, the other five possessing a potency above the normal standard. The tincture deteriorates after two years.

The author emphasizes that a very real danger may arise from excessive potency of these tinctures, and insists that only those which have recently been prepared and submitted to physiological tests should be dis-

posed.—Trans. Brit. Pharm. Conf., 1912; through Pharm. Journ and Pharmacist, Aug. 3, 1912, 120.

Tincture of Iodine: Improved Method of Preparation.—E. A. Geyer believes that many samples of tincture of iodine found to be below pharmacopoeial strength are so, because of carelessness in preparing same and that the iodine and potassium iodide are not entirely dissolved. He recommends placing the solids on a cotton diaphragm in a glass funnel and percolating with the alcohol. This method is claimed to completely and quickly dissolve the solids.—Bull. Pharm., April, 1912, 167. C. M. S.

Elixir Terpin Hydrate and Heroin: Improved Manipulation.—J. C. Arthur St. John says this preparation may be quickly made and without subsequent separation, if one-fourth of the glycerin be heated to 100° C. and the powdered terpin hydrate then stirred to solution. The balance of the ingredients are added in the regular manner. This also applies to other elixirs containing terpinhydrate.—Bull. Pharm., March, 1912, 123.

C. M. S.

Fluidextract of Goldenseal: Variability of Unofficial Preparations.—W. A. Puckner reports that while fluidextract of goldenseal of U. S. P. quality may be had, the examination of the so-called "colorless hydrastis" and "non-alcoholic fluidextract" of hydrastis, as found on the market, showed them to be quite variable in composition. Out of ten firms' products that were examined, but one approached the requirements for the official fluidextract of hydrastis.—Journ. Am. Med. Assoc., 1912, 1157. M. I. W.

Old India Rubber: Regeneration by Means of Terpineol.—Ordinary solvents have little action on used rubber, especially if vulcanized, and the utilization of old rubber is a difficult problem. According to "Rev. scientifique," however, terpineol is found to be an excellent solvent, and is applied in the following way: Two parts of terpineol and one part of the rubber are heated together in a closed vessel at a temperature above 100°. The solution is shaken with four volumes of petroleum spirit, and the mixture after decantation is distilled. The residue after treatment with alcohol and acetone closely resembles raw rubber; it is resistant to chemical agents, and allows of the addition of mineral substances, and so may be

revulcanized.—Rep. de Pharm., 1912 (6), p. 286.

Fireless Cooker: Uses in Making Preparations.—Hugh M. Reid says the fireless cooker may be successfully used in the preparation of benzoinated lard, soap liniment, camphor liniment, and similar preparations.—Bull. Pharm., Aug., 1912, 339. C. M. S.

Salvarsan: Use of.—John A. Fordyce, in discussing the administration of salvarsan in syphilis, points out that the efficiency of this drug bears a direct relation to the age of the infection. In the early stage three or four doses supplemented by mercury will in many cases cure the disease in from six months to a year. The florid stage requires more intensive treatment. In the primary stage it is possible permanently to reverse the blood reaction with salvarsan, but, as the disease grows older, the probabilities of changing it with only a few doses grow less.—Journ. Am. Med. Assoc., 59 (1912), 1231-1235. M. I. W.

Carbon Tetrachloride as a Solvent: An unsigned article (J. Am. M. Assoc., 1912, v. 59, p. 1470) points out that carbon tetrachloride is being adopted as a solvent in industrial extraction processes as a substitute for petroleum benzin. One of its chief advantages is its lack of inflammability and danger of explosion which has made it particularly useful in dyeing and cleaning establishments. M. I. W.

Iodides: Determination by Direct Titration.—J. W. Turrentine states that iodides

may be titrated direct in the presence of bromides or chlorides by the use of standard potassium permanganate, the liberated iodine being removed from the solution by means of carbon tetra-chloride, the end point being when the pink color of the potassium permanganate persisted for one minute.—Journ. Ind. & Eng. Chem., June, 1912, 455. L. A. B.

Iodic Acid: Detection in Nitric Acid.—G. Deniges detects iodic acid in nitric acid as follows: The solution is made alkaline with ammonia and filtered if necessary. A small quantity of a 1 to 2 per cent. solution of silver nitrate is then added, and a little ordinary zinc. In the presence of iodic acid a white turbidity due to colloidal silver iodide appears on shaking.—Bull. de Pharm. der Sud-Est., 1912 (V), 244.

Sulphur: Action on Vegetation.—E. Boulanger finds that flowers of sulphur, when added in minute quantity to the soil, has a remarkably favorable influence on the growth of carrots, haricot beans, celery, lettuce, potatoes, spinach, onions, and all other crops. The proportion used for experiments in pots was only 0.70 gm. of sulphur for 30 kilos of earth. The result was even more marked when manure was added as well as sulphur. When sterilized soil was employed the addition of sulphur appeared to have but little influence in increasing the crop. It appears, therefore, that the favorable action of sulphur is indirect. Probably it modifies the bacterial flora of the soil and prevents the development of certain organisms. The subject is being investigated further.—Comp. & Rear., 154 (1912), p. 369.

BORIC ACID IN BUTTER.

An experiment has been made by the Food Export Department of Victoria, (Australia), which must help to confirm the use of boric acid as preservative in butter. Victorian butter factories were asked to submit four boxes from one churning, to two of which boric acid in the amount permitted by the Australian Commonwealth (0.5 per cent.) had been added, while the other two were free from preservatives. One of each was shipped to England while the duplicates were retained in the local cool stores. Cable messages have been received from London that the trade is strongly in favor of the retention of the preservative, and that the butter containing the boric acid has a market preference of \$2 per hundredweight, mainly on the score of flavor.—Journ. A. M. A. (London Correspondence.)

Of General Interest

INTERNATIONAL PHARMACEUTICAL FEDERATION.

MEETING AT THE HAGUE.

A number of members of the International Pharmaceutical Federation assembled at The Hague on September 24 in order to take part in a series of meetings. The first meeting was held on September 24 at the Hotel Victoria, and among those who had been invited to meet the members were the representatives of the government, Prof. Dr. L. van Itallie, the mayor of The Hague, the chief inspector of public health (Dr. W. P. Ruijsch), the director of the international office (Dr. P. H. Eijkman), the secretary of the international office for medical congresses (Dr. van der Haer), the Board of the Dutch Pharmaceutical Society and The Hague Section of that body. In the absence of the President (Mr. H. L. Q. van Ledden Hulsebosch), the chair was taken by the Vice-President (Mr. R. Schoepp), who welcomed the visitors.

In a brief speech, the Mayor of The Hague said he highly appreciated the fact that The Hague had been chosen as the headquarters of the Federation. The French delegate, Mr. Mouliets, suitably replied on behalf of the foreign delegates. Subsequently a pleasant evening was spent, and on the following morning the guests made a trip to Leiden for the purpose of visiting the pharmaceutical institute of Prof. Dr. L. van Itallie, returning to The Hague at noon, when a special meeting took place.

There were present Prof. Dr. L. van Itallie, Leiden, delegate of the Dutch government; Mr. R. Schoepp, Maastricht, vice-president of the Organizing Committee; Mr. J. J. Hofman, The Hague, General Secretary; Dr. J. F. Suijver, Amsterdam, General Secretary of the Dutch Pharmaceutical Society; Mr. J. Damen, The Hague, Vice-President of The Hague Section of the Dutch Pharmaceutical Society; Mr. G. R. ten Burg, The Hague, Director of the Society of Pharmaceutical Officers of the Army and Navy; Mr. Oscar van Schoor, Antwerp, Secretary of

the Organizing Committee; Mr. V. Haazen, Antwerp, President of the Nationale Pharmaceutique; Dr. A. Schamelhout, General Secretary of the Tenth Congress of Pharmacy, at Brussels; Dr. A. Martin, Mons, Director of the Nationale Pharmaceutique; Mr. L. Mouliets, La Teste de Buch, delegate of the Association Générale des Syndicats Pharmaceutiques de France; Mr. Edmund White, London, Vice-President of the Pharmaceutical Society of Great Britain; Mr. H. J. Möller, Copenhagen, Vice-President of the Danmarks Apotheker forening; Prof. Dr. H. Thoms, Berlin, President of the Deutsche Pharmazeutische Gesellschaft and delegate of the Deutsche Apothekerverein and the Oesterreichische Pharmazeutische Gesellschaft; Mr. W. Hoffman, Aachen, Vice-President of the Verband Deutscher Apotheker—the latter being a guest.

The delegates were presented to his Excellency the Secretary for the Home Department, Mr. Th. Heemskerk, who attended the meeting. The following were unavoidably absent: The President, Mr. M. L. Q. van Ledden Hulsebosch; Dr. H. Selzmann, Berlin; Mr. F. Daminet, Brussels; Dr. H. Heger, Vienna; Mr. D. Blumenthal, St. Petersburg; Mr. A. Blomquist, Stockholm; Mr. Jules de Muzsa, Budapest; Mr. D. Nicolau, Bucharest; Mr. Macario Blas y Manada, Madrid; Mr. F. Ferrein, Moscow; Mr. L. G. Toraude, Asnières; Mr. A. Cuereh, Morges; Mr. O. de Koritsansky, Budapest.

A number of telegrams and letters of congratulation were received from several European countries.

The Vice-President (Mr. R. Schoepp, Maastricht) welcomed the delegates, and proposed that a telegram should be sent to her Majesty the Queen of Holland. The Home Secretary then addressed the meeting, expressing gratification that the Internationale Federation had been established in the Netherlands.

SECRETARY'S REPORT.

The General Secretary (Mr. J. J. Hofman, The Hague) then read a report relating to

the work which had been done preceding the meeting, which will in due course be published as a brochure. He mentioned that the Dutch government had given not only its financial support, but also had procured all the diplomatic information which was required for this brochure, which contains the rules and regulations of the Federation in French, German, English, Dutch, Hungarian, Italian, Spanish and Esperanto; the votes of the Congress at Brussels, a report of the meeting held in 1911, and would contain the votes of that meeting. It contained also, a list of pharmaceutical societies in different countries and a list of pharmaceutical periodicals published in those countries. The twenty national societies which were members of the Federation represent a number of 26,350 pharmacists. To secure the membership of small societies, it would be advisable to make the entrance to the Federation less difficult for these societies. Membership of the Federation for these societies, for editors of pharmaceutical journals, and other persons interested in the Federation was already possible by nomination as associates, of whom there were already twelve in the Federation. The Board of the Federation was already receiving regularly, in answer to a circular, forty-two periodicals from different countries and also different books and papers, reports of congresses, and the nucleus of an international library on pharmacy.

After Mr. Haazen had expressed his thanks to the Provisional Committee for all the work that had been done, and had expressed the hope that the Federation would apply the motto of the Dutch Government, "Je maintiendrai," Mr. Schoepp opened the meeting.

ELECTION OF OFFICERS.

The Board was then elected as follows: President, Dr. L. van Itallie, Ph. D. (Professor in Pharmacy at the University of Leiden); Vice-Presidents, Dr. H. Martin (Paris), Mr. Edmund White (London), Fr. H. Salzmann (Berlin), Mr. V. Haazen (Antwerp); General Secretary, Mr. J. J. Hofman, The Hague; Assistant Secretaries, Dr. A. Schamelhout (Brussels), and H. J. Möller (Copenhagen). Mr. Schoepp having wished the new Board much success, Dr. L. van Itallie took the chair. The new President thanked the Provisional Committee for the manner in which it had achieved its

work, and especially the President and Secretary, Mr. M. L. Q. van Ledden Hulsebosch and Mr. J. J. Hofman, for their valuable preliminary work.

As the hour was advanced, the meeting adjourned till the following day, and the members were invited to a dinner in the Restaurant des Deux Villes, at which the Home Secretary (Mr. Heemskerck) was present. Many toasts were proposed and honored. Mr. Schoepp proposed a toast to "The Queen," who sent the next morning an acknowledgement to the Committee. The Minister congratulated the Committee on its success, and stated that the Dutch Government had nominated Mr. van Ledden Hulsebosch, President of the Provisional Committee, an officer of the Order of Oranje Nassau.

On Thursday morning, September 26, the meeting was resumed, and the proposals of the delegates of France, Denmark and Sweden were discussed.

THE QUESTION OF SUBSCRIPTIONS.

Mr. Mouliets said he had originally opposed the admission of associates on the ground that he feared that the Federation would obtain an individualistic character in this way. He had since learned that the admission of these associates would not have such influence on the objects of the Federation, because the associates had no vote and would, therefore, agree to the admission of these associates, but proposed that before they were nominated by the Central Committee the advice should be asked of the members of the National Central Committees, and that they should not be admitted if those Committees opposed the admission.

Mr. Mouliets then proceeded to explain the reason of the opposition of the Association Générale to the large contribution of societies numerically strong. The proposal of the Association was to reduce the contribution in the following manner: For societies with less than 500 members, 100 frs.; for societies with 500 to 1500 members, 200 frs.; for societies with 1500 to 3000 members, 300 frs.; for societies with 3000 to 5000 members, 400 frs.; for societies with more than 5000 members, 500 frs.; and to lower the number of delegates in proportion. He believed that the advantages to the larger societies would not be so much more in proportion to the smaller societies, and that

the Federation would not entail much more expense in respect of the larger societies than for the smaller ones. Moreover, these larger societies were put to a greater cost in paying for the traveling expenses of their delegates to meetings.

Mr. Edmund White, the delegate from Great Britain, supported Mr. Mouliets. On the other hand, the delegate from the German societies, Dr. Salzmann, as well as Prof. Thoms, expressed the opinion that for the larger societies it was easier to pay a contribution according to the number of their members than for the small societies, and, further, they feared that the influence of the larger societies would become subordinate to the influence of the small societies if their right to appoint delegates in the Central Committee was decreased. Mr. Mouliets proposed to reduce the contribution of the larger societies in 1913, and agreed that for the year 1912 the contribution as fixed by the Provisional Committee should be adopted. Mr. Martin said that it was advisable to have a budget of the expenses of the Federation, and it was proposed to treat this subject at the next meeting, and in the meantime to adopt the rates of contribution as fixed.

The delegates from Denmark and France proposed that a definition should be drawn up of the societies which could be admitted as ordinary members. They were of opinion that only the societies which represent the pharmaceutical profession in their country in the widest sense should be admitted as ordinary members.

Mr. Hoffman, the representative of the Verband Deutscher Apotheker, who attended the meeting as a guest, communicated that his society had as members 20 per cent. proprietors of pharmacies and 80 per cent. pharmacists, who exercised the profession as assistants, etc. All these members have passed their major examination; there was no difference in education and tuition, and in many things their aim was the same—namely, promotion of pharmacy. The Verband also wished to promote the prosperity of the Federation by becoming an ordinary member.

Prof. Thoms replied that he was also of the opinion that they must get a definition in the rules for admission of the national societies, and proposed that in the first place the advice of the national members of the

Central Committee decided as to the admission of a new national society. When there was a society which wished to be admitted to the Federation, if that society was in a country that was not yet represented on the Central Committee, the Board of the Federation had to obtain information about the object and other particulars of such society.

As to the proposition of the delegate of Apothekare Societeten at Stockholm to call the general meetings of the Federation in the month of August, it was decided to accept as a general rule that the general meetings would be held in July, August, or September.

PLACE OF NEXT MEETING.

Dr. Schamelhout invited the Federation in the name of the Belgian societies to hold the next meeting at Ghent, and to organize this meeting so that it would be held immediately before or after the eleventh International Congress of Pharmacy, 1913, at The Hague-Scheveningen. It was decided that a date for the meeting at Ghent should be fixed.

Mr. Haazen and Mr. Mouliets proposed that admission of associates should be encouraged. The Société de Pharmacie d'Anvers and the Confederazione tra le Associazioni di Chimici Farmacisti d'Italia had already sought admission to the Federation as associates, and they hoped that this would soon be followed by other societies.

INTERNATIONAL PRESS AGENCY.

The General Secretary brought forward the suggestion to establish an international press agency. If the Federation nominated its corresponding members in the different countries, those members could send monthly reports of all facts relating to pharmacy to the Board, and then this collection of facts could be sent monthly from the office to the editors to consider what facts of international interest would be desired. The members of this international press office would be the editors of the papers who are associates, and who send their periodicals to the Board of the Federation. This proposal was supported by Prof. Thoms, and will be considered by the Board.

PHARMACEUTICAL NOMENCLATURE.

From Mr. Caswell A. Mayo was received a letter in which he brought to the notice of the Board the decisions of the Pharmaceutical Section of the Congress of Applied

Chemistry, and submitted the following resolution based thereon:

"WHEREAS, There is a notable lack of uniformity in the nomenclature adopted by the several Pharmacopoeias throughout the world, and

"WHEREAS, The multiplication of extra Pharmacopoeial titles of medicinal substances continues with increasing rapidity, and

"WHEREAS, Many of these titles simulate either in spelling or sound the titles of wholly dissimilar substances, and

"WHEREAS, Such similarity is a constant menace to the safety of the public, tending to cause errors in dispensing; therefore, be it

Resolved, By the International Pharmaceutical Federation, that steps should be taken to bring about the establishment of an International Committee on Pharmaceutical Nomenclature, with a view to the adoption of a uniform Pharmaceutical nomenclature throughout the world, and to prevent, as far as possible, the adoption of titles of similar sound or spelling for medicinal substances, whether of a proprietary character or not. And be it further

Resolved, That the President of the Federation appoint a committee of five members, whose duty it shall be to bring these regulations before the various national pharmaceutical organizations throughout the world and invite these bodies to appoint similar committees to confer with this committee with a view to elaborating plans for the creation of a permanent International Commission on Pharmaceutical Nomenclature."

This communication was referred to the General Committee.

After votes of thanks the meeting adjourned.

In the afternoon the members assembled at a farewell lunch in the Hotel Victoria.

<>

THE U. S. PUBLIC HEALTH SERVICE.

On August 11 President Taft set his signature to an act of Congress which changes the name of the Public Health and Marine Hospital Service to the Public Health Service, and also defines and materially en-

larges the functions of the service. Substantial increases are likewise made in the salaries of the principal officers.

The act reads as follows:

"An Act to change the name of the Public Health and Marine-Hospital Service to the Public Health Service, to increase the pay of officers of said service, and for other purposes.

"That the Public Health and Marine-Hospital Service of the United States shall hereafter be known and designated as the Public Health Service, and all laws pertaining to the Public Health and Marine-Hospital Service of the United States shall hereafter apply to the Public Health Service, and all regulations now in force, made in accordance with law for the Public Health and Marine-Hospital Service of the United States shall apply to and remain in force as regulations of and for the Public Health Service until changed or rescinded. The Public Health Service may study and investigate the diseases of man and conditions influencing the propagation and spread thereof, including sanitation and sewage and the pollution either directly or indirectly of the navigable streams and lakes of the United States, and it may from time to time issue information in the form of publications for the use of the public.

"Sec. 2. That beginning with the first day of October next after the passage of this act the salaries of the commissioned medical officers of the Public Health Service shall be at the following rates per annum: Surgeon general, six thousand dollars; assistant surgeon general, four thousand dollars; senior surgeon, of which there shall be ten in number, on active duty, three thousand five hundred dollars; surgeon, three thousand dollars; passed assistant surgeon, two thousand four hundred dollars; assistant surgeon, two thousand dollars; and the said officers, excepting the surgeon general, shall receive an additional compensation of ten per centum of the annual salary as above set forth for each five years' service, but not to exceed in all forty per centum; provided, that the total salary, including the longevity increase, shall not exceed the following rates: Assistant surgeon general, five thousand dollars; senior surgeon, four thousand five hundred dollars; surgeon, four thousand dollars; provided further, that there may be employed in the Public Health Service such help as may be provided for from time to time by Congress."

Editorial Notes and Announcements

JAMES H. BEAL, Editor.....Scio, O.

All communications for insertion in the JOURNAL, or respecting advertising should be sent to the Editor.

The Association does not accept responsibility for the opinions of contributors. Offensive personalities must be avoided.

Under the rules of the Post Office the JOURNAL can be regularly mailed only to bona-fide paid subscribers. Subscriptions and association dues should be sent to the Treasurer, H. M. Whepley, 2342 Albion Place, St. Louis, Mo.

Requests for back numbers, and claims for missing numbers should be sent to the Editor.

Claims for missing numbers will not be allowed if sufficient notice has not been given of change of address, and in no case if received later than sixty days from the date of issue.

<>

REPRINTS.

If the request is made at the time copy is submitted, authors will be furnished with not to exceed 50 reprints, without cover, of papers accepted for publication in the JOURNAL.

Larger numbers of reprints will be supplied by the Stoneman Press Co. at the following prices, provided the order is received before the type has been distributed:

100 copies, 4 pages, no cover, \$2.50, with cover, \$4.50.

200 copies, 4 pages, no cover, \$3.00, with cover, \$5.50.

50 copies, 8 pages, no cover, \$2.75, with cover, \$4.50.

100 copies, 8 pages, no cover, \$3.50, with cover, \$5.00.

200 copies, 8 pages, no cover, \$4.50, with cover, \$6.50.

50 copies, 12 or 16 pages, no cover, \$4.00, with cover, \$5.50.

100 copies, 12 or 16 pages, no cover, \$5.00, with cover, \$6.50.

200 copies, 12 or 16 pages, no cover, \$6.50, with cover, \$8.00.

Orders for reprints may be sent either to the Editor, or to the Stoneman Press Co. Columbus, Ohio.

OFFICIAL NOTICE OF PUBLICATION.

Statement of the ownership, management, circulation, etc., of the Journal of the American Pharmaceutical Association, published monthly, at Columbus, Ohio, required by the Act of Congress, Aug. 24, 1912:

Editor—James Hartley Beal.

Managing editor—James Hartley Beal.

Business manager—James Hartley Beal.

Publisher—The American Pharmaceutical Association.

Owner—The American Pharmaceutical Association.

Known bondholders, mortgagees, and other security holders, holding 1% or more of total amount of bonds, mortgages, or other securities—None.

(Signed) THE AMERICAN PHARMACEUTICAL ASSOCIATION.

Per JAMES HARTLEY BEAL.

Sworn to and subscribed before me this 2nd day of October, 1912.

HARRY A. ECKMAN,

Notary Public.

(My commission expires Jan. 10, 1913.)

<>

OFFICERS ELECT FOR 1913-1914.

Just as this portion of the JOURNAL goes to press, a telegram from Prof. H. V. Army, chairman of the Board of Canvassers, announces the election of the following officers of the A. Ph. A. for 1913-1914.

President—George M. Beringer, of New Jersey.

First Vice-President—Franklin M. Apple, of Pennsylvania.

Second Vice-President—W. S. Richardson, District of Columbia.

Third Vice-President—L. D. Havenhill, Kansas.

Members of the Council—Charles Caspari, Jr., of Maryland; Charles E. Caspari, of Missouri; John G. Godding, of Massachusetts.

All of the officers-elect are among the best known and most active members of the Association, and again the A. Ph. A. is to be congratulated upon its happy selection of those who are to direct its official activities.

The above officers-elect will be installed at the sixty-first annual convention, to be held at Nashville, Tenn., Aug. 25-30, 1913.

A NEW N. A. R. D. PROPOSITION.

It is a day of generally prevailing low temperature when the N. A. R. D. does not discover—or if there is nothing to discover, invent—some new method of serving the retail druggist. One of its latest inventions (we do not profess to keep track of all of them) is the proposal to establish a laboratory for the examination of the preparations which are offered to the public through the retail drug trade, something that has been needed for a long time. Several attempts have been made to create such a bureau, or laboratory, as a private enterprise, but the plans have either failed of materialization, or if successful, they have usually developed into laboratories for the giving of certificates of good character to products in return for a fee, supposedly paid for a more or less complete and unbiased analysis. Neither contingency need be feared for a proposition which is fathered and mothered by the N. A. R. D.

It will be observed that the new bureau very properly proposes to serve the retail druggist by serving the public, and is intended to provide the retailer with the knowledge that will enable him to protect his customers against unmeritorious or dangerous preparations. What is proposed amounts, in fact, to the establishment of a new Council in Pharmacy and Chemistry, but one conducted from the standpoint of the retail druggist, and devoted primarily to the examination of substances which are offered through him to the general public.

We have no information as to the scope and character of the proposed bureau beyond that contained in the editorial in *Notes* of Oct. 3, but this information is sufficient to indicate that the N. A. R. D. is about to enter upon a new activity that should be capable of conferring great benefit upon the retail druggist, a feat which it will accomplish if it succeeds in separating the sheep from the goats among proprietary articles, and thus save the retailer from the shame of lending his endorsement to those which are unworthy of it.

It is quite likely that the new laboratory, like most good things, will have a far wider development than its proposers have marked out for it. In it we see the possibility of great good for the N. A. R. D., and when the proposition is put in operation that asso-

ciation can count upon the efforts of many A. Ph. A. members to help push it along.



THE EDITOR OFFERS SOME PRIZES.

There is evidence to show that in cities where prosperous local branches of the A. Ph. A. are in operation, some, at least, of the local pharmacists are working together for the development of pharmacy along rational lines, and that the pharmacists of such cities are not only coming closer together among themselves, but also closer to the local medical profession in sympathy and harmony of action. In cities where such branches do not exist, almost the opposite conditions generally prevail, and the local pharmacists hold gloomy views as to their professional future and as to the possibility of establishing better relations with physicians.

As a practical means of stimulating the work of local branches where such are already in operation, and of encouraging their establishment in cities where they are not now in existence, the editor of the *JOURNAL* offers the following prizes:

1. Ten dollars for the most complete and practical Constitution and set of By-Laws for the government of a Local Branch.
2. Five dollars for the second best Constitution and set of By-Laws.
3. Ten dollars for the best set of Model Programs (seven or more) for the sessions of Local Branches.
4. Five dollars for the second best set of Model Programs (seven or more) for the sessions of Local Branches.

The minimum is set at seven for the reason that this is about the average number of working sessions of the branches in each year.

The conditions under which the above prizes are offered are as follows:

(a) Not less than three papers must be offered in each contest, i. e., three in the model Constitution and By-Laws contest, and three in the Model Programs contest. If less than three are offered under either head, the offer of a prize under that head will be withdrawn.

(b) Every contestant must be a member of the A. Ph. A., but need not be a member of an existing local branch.

(c) All papers submitted must be in the hands of the editor not later than Feb. 1, 1913.

(d) Each paper must be marked with a synonym, and be accompanied by a sealed envelope containing the real name and address of the contestant, the envelope to be marked externally with the same synonym as the papers submitted for the consideration of the judges.

(e) The judges will be selected by the editor, and no prize will be awarded if, in the opinion of the judges, the papers are not sufficiently meritorious to deserve a prize.

The Pharmacist and the Law

ABSTRACT OF LEGAL DECISIONS.

PAROL AGREEMENTS WITH SALESMEN. In an action for the price of a soda fountain the buyer's order had an agreement by him to pay all setting-up expenses stricken out. The seller wrote a letter accepting the order as per copy enclosed, which copy did not have the agreement as to setting-up expenses stricken out. It was held that, as the seller had made no claim on the purchaser for setting-up expenses, there was a completed contract, notwithstanding the discrepancy. The agreement contained a declaration that there were no conditions or agreements with the seller's salesman, except those therein stated. It was held that the purchaser was not entitled to show by parol an agreement to take his old fountain as part payment. The alleged agreement was claimed to have been made with the seller's salesman. This was, therefore, an offer to prove an agreement with the salesman at variance with the terms of the contract.

Spence Drug Co. v. American Soda Fountain Co., Georgia Court of Appeals, 75 S. E., 817.

MANUFACTURE OF SMOKING OPIUM. When smoking opium has been produced, it may be smoked more than once. The residuum left after a first smoke may be heated and smoked again. This residuum is known as yen shee. If to it some additional smoking opium is added, each time it is reheated, the process of resmoking may be continued longer. It is held by the Circuit Court of

Appeals that the mere mixing of such residuum with the residue of opium that has been smoked and heating it is not a "manufacture of opium for smoking purposes" within the meaning of the internal revenue act of 1890 imposing a tax on smoking opium and regulating its manufacture.

Shelley v. U. S., 198 Fed., 88.

SELLING LIQUOR ON PRESCRIPTION. A druggist and a pharmacist, it is held, may be convicted of selling liquor without a license, where a large number of witnesses testify that they purchased the liquor from the druggist on prescriptions from the physician, who was not their family physician, and who made no physical examination of them, and without inquiry as to the use to be made of the whiskey; that a number of the witnesses were men of known intemperate habits; and that one of the witnesses secured one quart and two pints of whiskey on a single day on three prescriptions.

Commonwealth v. Dudley, 46 Pa. Sup. Ct., 337.

SALE OF INTOXICATING LIQUORS. The Colorado revenue act of 1902, as amended in 1911, provides that any one selling spirituous liquors shall pay an annual license tax of \$25 for each drug store. It is held that under this statute pharmacists desiring to make sales of such liquor, even for medicinal purposes on prescription, in anti-saloon territory, must procure a state license. The local option law of 1908 does not affect the statute in this respect.

Clayton v. People, Colorado Supreme Court, 123 Pac., 662.

VIOLATION OF CONTRACT OF SALE OF GOODS WILL. A practicing physician and a specialist in the treatment of particular diseases employed in his specialty remedies prepared and used according to formulas of his own. The business prospered and became valuable. After selling an interest in the business to another, he sold out his remaining interest in the business. Action was subsequently brought against him and another alleged to be in collusion with him, by his successors in the business, to enjoin them from conduct destructive of the benefits and advantages flowing from the contract of sale. It was held that the contract involved in the case, limiting the right of a physician to practice as a specialty, and limiting his right to sell or

disclose certain formulas used in such practice, was a valid one. While contracts in general restraint of trade or business are void, contracts less restrictive are invalid only when inimical to the public welfare, and they are to be judged, not by the arbitrary measure of extent in time or extent in space, but by their reasonableness under all the circumstances, having regard both for the liberty of a person to make beneficial use of his own and the public consequences of such use. Having made such a contract as that in question, the maker and any one in collusion with him, might be enjoined from doing any act which would prevent the vendees from enjoying the benefit of such influence and good will to the same extent as they were enjoyed before the sale.

Mills v. Ressler, Kansas Supreme Court, 125 Pac., 58.

POISONOUS LIQUID—SUFFICIENCY OF EVIDENCE. Action was brought against a druggist for injury to a customer's hands and lips by a preparation purchased for use as a hand lotion. The plaintiff testified that the medicine did not at first affect the hands, but in two or three days they commenced to get red and burn; that she used some of it on her lips, which became red and sore and scaled off; that she was confined to bed for five or six weeks, during all of which time her hands were very red and swollen, and had a scaly or burned appearance. This was corroborated by the testimony of other witnesses. The evidence was held sufficient to sustain a finding by the jury that the plaintiff's injuries were caused by the poisonous and unfit condition of the preparation delivered, and not by eczema, as contended by the defendant. If the plaintiff's testimony was true and the preparation blistered and burned the plaintiff's hands and lips, and rendered her helpless through the liquid becoming scattered through the body, it was a poisonous liquid.

Kelly v. Ross, (Mo.), 148 S. W., 1000.

PHYSICIAN AND PHARMACIST—SALE OF LIQUOR. The Washington statute, Rem. and Bal. Code, § 4744, prohibits the sale of liquor with or without a license within 2000 feet of any normal school. It was held that the statute applies to a physician who is also a

pharmacist, who prescribes whiskey for a patient in his capacity as a physician and fills the prescription at his pharmacy, which is located within the prohibited limits.

State v. Pomeroy, Washington Supreme Court, 123 Pac., 514.

COMPOUNDING PRESCRIPTION—ADMISSION OF LIABILITY BY PARTNER. In an action against a firm of druggists for negligently compounding a prescription, whereby the plaintiff was seriously injured, one of the partners admitted his liability. The defendants were represented by separate counsel, who did not act in harmony. While counsel for the defendant who admitted liability was making his argument to the jury, he was called to order by the court for suggesting that the administration of poison was not within the scope of the partnership business so as to bind the innocent partner. He then said that they did not plead the baby act, that the plaintiff was entitled to a verdict, and he hoped it would be given to him. It was held that the jury could not have construed these remarks as anything more than an admission of liability by the partner himself and not as a collusive admission of liability.

Reifling v. Juede, (Mo.), 147 S. W., 168.

MISBRANDING—INSUFFICIENT INFORMATION. Missouri Laws, 1911, pp. 261, 262, §1, make it unlawful for any person to have in his possession for sale any non-alcoholic drinks which are misbranded. Section 4 provides that such drinks are misbranded if the bottle containing them bears the name or brand of a manufacturer other than the one using it. An information under the statute charged the accused with using the name of other manufacturers, namely, "Queen City Broom & Bottling Company," and "Scholten Bottling Company;" but it did not specify whether these were the names of corporations, or partnerships, or of some individuals whose names were not given. It was held that the information was insufficient. Unless these were the names of other manufacturers, the accused would not be guilty of violation of the statute by using them; for he could use any name he wished upon his own product, provided he did not use a name used by another manufacturer.

State v. Murphy, (Mo.), 147 S. W., 520.

ALCOHOLIC MEDICINAL PREPARATIONS FOR THE SALE OF WHICH SPECIAL TAX IS REQUIRED.

(Treasury Decision No. 1794.)

Special tax will be required for the sale of any of the prescriptions herein named, even though such sales are for medicinal use. The liabilities of dealers for sales for medicinal use of any of the preparations marked with an asterisk (*) will, however, be held to date from and after October 1, 1912.

The names of most of the preparations heretofore given on the various lists which have been published will be found included in this list, the only exceptions being those the manufacture of which have revised their formulas to meet the requirements of this office or which are no longer on the market.

Special tax should not, therefore, be required for the sale for medicinal use of any alleged medicinal compound not on this list until this office has been communicated with and specific instructions received.

The preceding paragraph does not, however, apply to the class of compounds usually described by the term "Cocktail bitters," which are suitable for and usually used as beverages.

It having been found in various instances that there are several preparations of the same name on the market, the names of the manufacturers of the preparations examined by this office are here given, and it should be understood that only the preparations are compounded by the manufacturer whose name is given is embraced in this list.

Special tax will be required for the manufacture and sale of beef, wine, and iron, unless the formula on page 1821 of the nineteenth edition of the United States Dispensatory or is otherwise sufficiently medicated to be unsuitable for use as a beverage. Special tax will also be required for the sale of the compound ordinarily sold under the name of rock, rye, and glycerine.

Collectors and revenue agents should continue to secure and forward to this office samples of preparations which they have reason to believe are or may be used as a beverage.

Ale and Beef—Ale & Beef Co., Dayton, Ohio.
Allen's Restorative Tonic—Faxon & Gallagher Drug Co., Kansas City, Mo.
*Alps Bitters—Peter Rostenkowski, Chicago, Ill.

American Alimentary Elixir—American Drug Store, 1115 Canal St., New Orleans, La.
American Elixir—Beegs Manufacturing Co., Chicago, Ill.
American Stomach Bitters—American Drug Store, New Orleans, La.
Amer Tonic—G. Picon (Imported).
Angostura Aromatic Tincture Bitters—E. R. Behlers, St. Louis, Mo.
*Aphsinte—The Cordial Panna Co., Cleveland, Ohio.
Arbaugh's Newport Bitters—Daniel Stewart Co., Indianapolis, Ind.
Aroma Bitters—V. Gautier, 287 Hudson St., New York.
Aromatic Bitters—Hanigan Bros., Denver, Colo.
Aroma Stomach Bitters—J. S. Smith & Co., Burlington, Iowa.
*Aromatic Bitters—C. N. Prior, Middletown, N. Y.
*Aromatic Stomach Bitters—The S. Holtzman Co., Johnstown, Pa.
Atwood's La Grippe Specific—Excelsior Medicine Co., Chicago, Ill.
Angauer Bitters—Angauer Bitters Co., Chicago, Ill.
Angauer Kidney-Aid—Do.
Augustiner Health and Stomach Bitters—A. M. August, Milwaukee, Wis.
Beef, Wine and Iron—Waudby, Son & Co., Pittsburgh, Pa.
*Beef, Iron and Wine—Crown Supply Co., Pittsburgh, Pa.
*Beef, Iron and Wine—The Jarmuth Co., Providence, R. I.
*Beef, Iron and Wine—Lion Drug Co., Buffalo, N. Y.
*Beef, Iron and Wine—Owl Drug Co., San Francisco, Cal.
*Ben Hur Kidney and Liver Bitters—Fred Reynolds, Detroit, Mich.
Berg's Hawkeye Bitters—Berg Medicine Co., Des Moines, Iowa.
Belvedere Stomach Bitters—Loewy Drug Co., Baltimore, Md.
Bismark Laxative Bitters—C. Lange & Co., Chicago, Ill.
Bismark's Royal Nerve Tonic—R. A. Smith & Co., Pana, Ill.
*Bitter Wine—Struzynski Bros., Chicago, Ill.
*Bitter Wine—Aug. W. Burggraf, Johnstown, Pa.
Bitters—The Atlantic Vineyard & Wine Co., Philadelphia, Pa.
Blackberry—Karl's Medicine Co., Aberdeen, S. Dak.
Blackberry Cordial—International Extract Co., Philadelphia, Pa.
Blackberry Cordial—Irondequoit Wine Co., Rochester, N. Y.
Blackberry Cordial—Strother Drug Co., Lynchburg, Va.
Blackberry and Ginger Cordial—Standard Chemical Co., Fort Smith, Ark.
Black Tonic—Albert Niggemann, St. Louis, Mo.
Bonekamp Stomach Bitters—Geo. J. Fixmer, Springfield, Ill.
Bonekamp Bitters—J. S. Smith & Co., Burlington, Wis.
Botanic Bitters—F. E. Mayhew & Co., San Francisco, Cal.
Bradenberger's Colocynthis—Standard Chemical Co., Fort Smith, Ark.
Brod's Celery Pepsin Bitters—John Brod Chemical Co., Chicago, Ill.
Brown's Utryme Tonic—A. E. & E. V. Brown Co., Mobile, Ala.
Brown's Aromatic Cordial Bitters—Charles Leich & Co., sole agents, Evansville, Ind.
Brown's Vin Nerva Tonic—Brown Chemical Co., Nashville, Tenn.
Buckeye Bitters—George Albert, Milwaukee, Wis.
Carpathian Bitters—L. J. Sulak Land Co., West, Tex.
Celery Bitters and Angostura—Frank J. Maus, Kalamazoo, Mich.
*Celery Extract—The P. S. Abbey Co., Kalamazoo, Mich.
Clarke's Rock Candy Cordial—Colburn, Birks & Co., Peoria, Ill.

- Clayton & Russell's Stomach Bitters—Adams & Co., New York City.
- Clifford's Cherry Cure—Standard Chemical Co., Fort Smith, Ark.
- Clifford's Peruvian Elixir—Do.
- Cinchona Bitters—Morris & Dickson Co., Shreveport, La.
- Crescent Star Jamaica Ginger—Gulf Manufacturing Co., New Orleans, La.
- Coca Wine—American Drug Store, 1115 Canal St., New Orleans, La.
- *Cocktail Bitters—Milburn & Co., Baltimore, Md.
- Columbo Elixir—Columbo Elixir Co., Philadelphia, Pa.
- Columbo Peptic Bitters—L. E. Jung & Co., New Orleans, La.
- *Columbo Tonic Bitters—Her & Co., Omaha, Nebr.
- Cooper's Nerve Tonic—Muller & Co., Baltimore, Md.
- Colasaya—Zwart's Pharmacy Co., St. Louis, Mo.
- *Cordial Panna—The Cordial Panna Co., Cleveland, Ohio.
- Crescent Tonic Bitters—Parker Blake Co., New Orleans, La.
- *Cross Bitter Wine—Eugene Parisek Co., Chicago, Ill.
- *Iamana Gentian Bitters—Milburn & Co., Baltimore, Md.
- Dandelion Bitters—Beggs Manufacturing Co., Chicago, Ill.
- Dandy Bracer—Dandy Bracer Co., Philadelphia, Pa.
- De Witt's Stomach Bitters—E. C. De Witt & Co., Chicago, Ill.
- *Didier's Bitters—J. A. Didier, Binghamton, N. Y.
- Dr. Brown's Blackberry Cordial—Texas Drug Co., Dallas, Tex.
- Dr. Brown's Tonic Bitters—Brown Chemical Co., Nashville, Tenn.
- Dr. Bouvier's Buchu Gin—Dr. Bouvier's Specialty Co., Louisville, Ky.
- Dr. Bergell's Magen Bitters—Imported.
- Dr. Fowler's Meat and Malt—Meat & Malt Co., Louisville, Ky.
- Dr. Gray's Tonic Bitters—Central Botanical Co., Cherry Creek, N. Y.
- Dr. Hortenbach Stomach Bitters—Dr. Hortenbach, Minneapolis, Minn.
- Dr. Hopkins Union Stomach Bitters—F. S. Amidon, Hartford, Conn.
- Dr. Hoffman's Golden Bitters—F. Trandt, St. Louis, Mo.
- Dr. Rattinger's Bitters—Rattinger's Medical Co., Sappington, Mo.
- Dr. Sterki's Ohio Bitters—Dr. V. Sterki & Co., New Philadelphia, Ohio.
- Dr. Sherman's Peruvian Tonic and Systematizer—Des Moines Pharmacal Co., Des Moines, Iowa.
- Dr. Worme's Gesundheit Bitters—J. D. Helmsoth, Chicago, Ill.
- Dozier's Apple Bitters—Bitter Apple Bitters Co., Hattiesburg, Miss.
- *Drake's Plantation Bitters—P. H. Drake & Co., Brooklyn, N. Y.
- Dubonnet Wine—Imported.
- Dubonnet—Do.
- Ducro's Alimentary Elixir—Do.
- Duffy's Malt Whiskey—Duffy Malt Whiskey Co., Rochester, N. Y.
- Elixir of Bitter Wine—Pleasant Tonic Bitters Co., Chicago, Ill.
- Elixir of Bitter Wine—V. Bokr, Chicago, Ill.
- Elixir Calisaya—Reid, Yeomans & Cubit, New York City.
- Elixir Calisaya Bark—Upjohn Co., New York, N. Y.
- Eucalyptus Cordial—Zwartz Pharmacy Co., St. Louis, Mo.
- Eureka Stomach Bitters—Iowa Drug Co., Des Moines, Iowa.
- E. Z. Laxative Bitters—Carmeliter Bitters Co., New York, N. Y.
- Famous Wiener Bitters—Foxman Bros., Rock Island, Ill.
- *Faxon's Beef, Iron and Wine—Faxon, Williams & Faxon, Buffalo, N. Y.
- Fernet-Carlisi Fernet Bitters—C. Carlisi Co., New York City.
- *Ferro-China Bascal—Basilea & Calandra, New York City.
- Ferro-China Berna—W. P. Bernagozzi, New York City.
- Ferro-China Bissleri (Felice Bissleri)—Imported.
- *Ferro-China-Blotto—Vittorio Blotto, New York City.
- Ferro-China Carlisi Tonic Bitters—C. Carlisi Co., New York City.
- Ferro-China-Citro Bitters—G. Citro & Co., Hoboken, N. J.
- *Ferro-China-Columbia—Columbia Distilling Co., Albany, N. Y.
- Ferro-China di Carlo—Lange Bros., New York City.
- *Ferro-China Frantantuono—Jos. Frantantuono, Providence, R. I.
- Ferro-China Ideal—Marrone & Lofar, Utica, N. Y.
- Ferro-China-Salus—Italo-American Liquor Mfg. Co., New York City.
- *Ferro-China Tito Manlio—Gennaro T. Manlio, Philadelphia, Pa.
- Ferro-China-Trifonfo—Basilea & Calandra, New York City.
- Ferro-China Universale—Imported.
- *Ferro-China Vitanova—Steinhardt Bros. & Co., New York City.
- Ferro Quina Bitters—D. P. Rossi, San Francisco, Cal.
- *Finaflavora—The P. S. Abbey Co., Kalamazoo, Mich.
- Fine Old Bitter Wine—Struzynski Bros., Chicago, Ill.
- F. Miller & Co.'s Stomach Bitters.
- Folger's Aromatic Bitters—M. D. Folger & Sons, Grand Rapids, Mich.
- *Fort Henry Ginger Compound—Reed, Robb & Breiding, Wheeling, W. Va.
- Gastrophon—Edward Rimsa, Chicago, Ill.
- Gentian Bitters—Evans Smith Drug Co., Kansas City, Kans.
- Genuine Bohemian Malted Bitter Wine Tonic—Edward Rimsa, Chicago, Ill.
- Germania Herb, Root, and Fruit Tonic Bitters—Dr. F. G. Nordman, Chicago, Ill.
- German Stomach Bitters—Geo. Kuevers, Granite City, Ill.
- *German Stomach Bitters—Wm. W. Torge, Waukesha, Wis.
- Ginger Tonic—Loewy Drug Co., Baltimore, Md.
- Ginseng Cordial—American Ginseng Medical Co., Syracuse, N. Y.
- Glycerine Tonic (Elixir Pepsin)—W. P. Underhill, Concord, N. H.
- *Glycerine Tonic—G. C. Kimmerer, Canajoharie, N. Y.
- Graham's Brand Orange Bitters—Charles Jacquin, New York City.
- Green's Chill Tonic—M. V. Green, Son & Co., Selma, N. C.
- Greiner's Blackberry Cordial—Greiner-Kelly Drug Co., Dallas, Tex.
- *Gross Bros. Blood and Liver Tonic—Gross Bros., Ill.
- Harrison's Quinine Tonic—I. X. L. Chemical Co., Chicago, Ill.
- Health Bitters—H. Bitzegeol, Chicago, Ill.
- *Health Bitters—Jos. G. Sporrer & Co., Toledo, Ohio.
- Herb Bitters—Otto F. Lentz, Petersburg, Ill.
- Herbs Bitters—Herb Medicine Co., Reading, Pa.
- Herbton—Hooper Medical Co., Hillsboro, Tex.
- Heublein's Calisaya Bitters—G. F. Heublein & Bro., New York City.
- Hop Bitters—Hop Bitters Mfg. Co., Rochester, N. Y.
- *Horke Vino Bitter Wine—Michael Bosak, Scranton, Pa.
- Indian Stomach Bitters—Dr. D. Winegardner, Hanna, Okla.
- I. X. L. Bitters—I. X. L. Chemical Co., Chicago, Ill.
- Jack Pot Laxative Bitter Tonic—J. B. Scheue Co., Chicago, Ill.
- *Jack's Indian Tonic—W. L. B. Jack, Portsmouth, Ohio.
- Jaffe's Intrinsic Tonic—Jaffe Wine Co., Sacramento, Cal.

- Jerome's Dandelion Stomach Bitters—Jerome Chemical Co., St. Louis, Mo.
- Johnston's Cherry Elixir—Parker Blake Co., New Orleans, La.
- Jones Stomach Bitters—Natchez Drug Co., Natchez, Miss.
- June-Kola—Beggs Mfg. Co., Chicago, Ill.
- Juniper Kidney Cure—Juniper Kidney Cure Co., Fort Smith, Ark.
- Karle's German Stomach Bitters—Karle German Bitters Co., Aberdeen, S. Dak.
- Karlsbader Stomach Bitters—Jos. Landshut, Pittsburgh, Pa.
- Katarno—Katarno Co., New York City.
- K. K. K.—Morris & Dickson Co., Shreveport, La.
- Koehler's Stomach Bitters—Koehler Bitters Co., New York City.
- Kahn's Iron and Malt Whiskey—Kahn Brothers, New York City, N. Y.
- *Kennedy's East India Bitters—Hler & Co., Omaha, Nebr.
- *Kidniwell—Brown Drug Co., Sioux Falls, S. Dak.
- Ko-Ca-Ama—The Wm. Brooks Medicine Co., Russellville, Ark.
- Kola and Celery Bitters—Milburn & Co., Baltimore, Md.
- Kola Wine—Reid, Yeomans & Cubit, New York City.
- Kreuzberger's Stomach Bitters—B. Kreuzberger, Logansport, Ind.
- Krummel's Bonekamp Maag Bitters—Hry. Krummel, New York City.
- Kudros—A. M. Hellmann & Co., St. Louis, Mo.
- Laxa Bark Tonic—Natchez Drug Co., Natchez, Miss.
- Lee's Celebrated Stomach Bitters—Lee's Anti-Trust Medicine Co., Joplin, Mo.
- *Lekko Stomach Bitters—Struzynski Bros., Chicago, Ill.
- Lemon Ginger—Ballard Snow Liniment Co., St. Louis, Mo.
- Liverine—T. S. Mitchell Co., Providence, R. I.
- Lutz Stomach Bitters—Chas. M. Lutz, Reading, Pa.
- *Lyons Stomach Bitters—Lyons Bitters Co., Chicago, Ill.
- Magador Bitters—E. J. Rose & Co., Tacoma, Wash.
- Magen Bitters—A. J. Wabersky, Chicago, Ill.
- *Magen Bitters—Mrs. Ingeborg Rosmer, Milwaukee, Wis.
- Mark's Famous Stomach Bitters—R. Marks, Milwaukee, Wis.
- McCorrison's Compound of Golden Seal—O. S. McCorrison, Union, Me.
- Meta Multa—Bernheim Distilling Co., Louisville, Ky.
- *Mexican Stomach Bitters—Hler & Co., Omaha, Nebr.
- Mikado Wine Tonic—Mikado Medicine Co., West Manchester, N. H.
- Milburn's Kola & Celery Bitters—Milburn & Co., Baltimore, Md.
- Miller Brand Bitters—Pure Food Cordial Co., New York City.
- Mild Honey Wine—Struzynski Bros., Chicago, Ill.
- *Nature's Remedy for Kidney Troubles and Blood Poisoning—Dr. J. T. Sumpter, Bowling Green, Ky.
- Neuropin—J. B. Scheuer Co., Chicago, Ill.
- Newton's Nutritive Elixir—Parker-Blake Co., New Orleans.
- Novak's Stomach Elixir—John Novak, Chicago, Ill.
- Obermuller's Bitters—Jos. Bollenbeck, Madison, Wis.
- O'Hare's Bitters—O'Hare Bitters Co., Pittsburgh, Pa.
- Old Dr. Scroggin's Bitters—A. J. Adye, Adyeville, Ind.
- Old Dr. Jacques Stomach Bitters—D. F. Giles & Co., Concord, N. H.
- Orange Bitters—A. L. Joyce, Traverse City, Mich.
- Our Ginger Brandy—Rex Bitters Co., Chicago, Ill.
- Ozark Stomach Bitters—Lee's Anti-Trust Medicine Co., Joplin, Mo.
- Pale Orange Bitters—Feld, Son & Co., London, England.
- Panama Bitters—Richardson Drug Co., Omaha, Nebr.
- *Panama Bitters—W. R. Reeve, Dorchester, Mass.
- *Parker's Beef, Wine, and Iron—Parker-Brown Co., Pittsburgh, Pa.
- Pepsin Stomach Bitters—(E. L. Arp) Imported.
- Peptonic Stomach Bitters—Ross, Flowers & Co., Chicago and New York.
- *Peruvian Bitters—Reed, Robb & Brelding, Wheeling, W. Va.
- *Peter Paul Stomach Bitters—Paul P. Fashbender, Detroit, Mich.
- Peychand's Bitter Wine Cordial—L. E. Jung & Co., New Orleans.
- Pilsener Bitter Wine—Frenstat Bitters Co., West, Tex.
- Pioneer Ginger Bitters—Dr. Koehler Medicine Co., Appleton, Wis.
- Pond's Ginger Brandy—Pond's Bitters Co., Chicago, Ill.
- Pond's Rock and Rye—Do.
- Quinquina Dobonnet—Imported.
- *Rex Ginger and Brandy Tonic—Rex Bitters Co., Chicago, Ill.
- *Rex Ginger—Do.
- Rheinstrom's Stomach Bitters—Rheinstrom Bros., Cincinnati, Ohio.
- Riley's Kidney Cure—Jas. S. Riley, Hayne, N. C.
- Rimsovo Malto-Sove Vino Chino—Ed. Rimso, Chicago, Ill.
- Rockandy Cough Cure.
- *Rosolio—The Cordial Panna Co., Cleveland, Ohio.
- Royal Pepsin Tonic—L. & A. Scharff, St. Louis, Mo.
- *Royal Pepsin Stomach Bitters—Do.
- *Sarasin Stomach Bitters—Wm. Blech, New York City.
- St. Rafael Quinquina—Imported Scheetz.
- Scheetz Bitter Cordial—Percy R. Hentz, Pittsburgh, Pa.
- *Schier's Famous Bitters—Wendell Schler, Alexandria, Ind.
- *Schmit's Celebrated Strengthening Bitters—Geo. W. Tepe, Evansville, Ind.
- *Schroeder's German Bitters—Milburn & Co., Baltimore, Md.
- Simon's Aromatic Stomach Bitters—Samuel B. Schein, St. Paul, Minn.
- Sirena Tonic—Sirena Manufacturing Co., New York City.
- Smart Weed—Francis Cropper Co., Chicago, Ill.
- Smith's Bitters—Van Natta Drug Co., St. Joseph, Mo.
- Smith's Vitalizing Bitters—Ben Smith, Scranton, Pa.
- Steinkonig's Stomach Bitters—Adam Steinkonig, Cincinnati, Ohio.
- Stomach Bitters—Imported by J. G. & J. Boker, New York City.
- Stoughton Bitters—A. L. Joyce, Traverse City, Mich.
- Strauss Exhilarator—Wm. H. Strauss, Reading, Pa.
- Sure Thing Tonic—Furst Bros., Cincinnati, Ohio.
- *Tamerina—Ellis-Lillybeck Drug Co., Memphis, Tenn.
- Tatra—B. Zeman, Chicago, Ill.
- *Tokay Quinine Iron Wine—Burger & Erdeky, Chicago, Ill.
- Tolu Rock and Rye.
- True's Magnetic Cordial—Standard Chemical Co., Fort Smith, Ark.
- U-Go—Fritz T. Schmidt & Sons, Davenport, Iowa.
- Uncle Josh's Dyspepsia Cure—Dr. Worthington's Drug Co., Birmingham, Ala.
- Underberg's Bonekamp Maag Bitters—Imported by Luyties Bros., New York City.
- *Vigo Bitters—F. C. Altmeier & Co., Chicago, Ill.
- Vin de Michael—Imported.
- Vin Mariani—Mariani & Co., New York City.
- Vino-Kolafra—Mead, Johnson & Co., Jersey City, N. J.

Walker's Tonic—Dreyfuss, Weil & Co., Paducah, Ky.
 Warner's Stomach Bitters—Warner, Friday & Co., Sioux City, Iowa.
 Webb's A No. 1 Tonic—Webb's Co-Operative Co., Sacramento, Cal.
 Westphalia Stomach Bitters—E. R. Behlers, St. Louis, Mo.
 White Cross Bitters—V. Gautier, New York City.
 White's Dyspepsia Remedy—W. L. White & Co., Louisville, Ky.
 •Will Do—The Will Do Co., Detroit, Mich.
 Williams's Kidney Relief—Parker, Blake & Co., New Orleans, La.
 •Wine of Chenstohow—Skarzynski & Co., Buffalo, N. Y.
 •Wine of Pomelo, with Beef and Iron—Iron-dequoit Wine Co., Rochester, N. Y.
 Woodbury Brand Bitters—Steinhart Bros. & Co., New York City.
 Zeman's Medicinal Bitter Wine—B. Zeman, Chicago, Ill.
 Zien Stomach Bitters—Zien Bros., Milwaukee, Wis.
 Zig-Zag—Walker's Tonic Co., Paducah, Ky.

ROYAL E. CABELL, Commissioner.



LEGISLATIVE BODIES WHICH WILL HOLD SESSIONS IN 1913.

Sixty-second United States Congress, Dec. 2, 1912, to March 4, 1913.

Sixty-third United States Congress, March 4, 1913.

Arkansas, Jan. 13 1913; 60 days session.
 California, Jan. 1, 1913; no limit.
 Colorado, Jan. 1, 1913; no limit.
 Connecticut, Jan. 8, 1913; no limit.
 Delaware, Jan. 7, 1913; 60 days session.
 Florida, April 2, 1913; 70 days session.
 Georgia, June 25, 1913; 50 days session.
 Hawaii, Feb. 13, 1913; 90 days session.
 Idaho, Jan. 6, 1913; 60 days session.
 Illinois, Jan. 4, 1913; no limit.
 Indiana, Jan. 5, 1913; 60 days session.
 Iowa, Jan. 13, 1913; no limit.
 Kansas, Jan. 14, 1913; 50 days session.
 Maine, Jan. 1, 1913; no limit.
 Massachusetts, Jan. 3, 1913; no limit.
 Michigan, Jan. 2, 1913; no limit.
 Minnesota, Jan. 3, 1913; 90 days session.
 Missouri, Jan. 8, 1913; 70 days session.
 Montana, Jan. 6, 1913; 60 days session.
 Nebraska, Jan. 7, 1913; 60 days session.
 Nevada, Jan. 20, 1913; 60 days session.
 New Hampshire, Jan. 1, 1913; no limit.
 New Jersey, Jan. 7, 1913; no limit.
 New York, Jan. 1, 1913; no limit.
 North Carolina, Jan. 9, 1913; 60 days session.
 North Dakota, Jan. 7, 1913; 60 days session.
 Ohio, Jan. 6, 1913; no limit.
 Oklahoma, Jan. 3, 1913; 60 days session.

Oregon, Jan. 8, 1913; 40 days session.
 Pennsylvania, Jan. 17, 1913; no limit.
 Porto Rico, Jan. 6, 1913; 60 days session.
 Rhode Island, Jan. 7, 1913; 60 days session.
 South Carolina, Jan. 14, 1913; 40 days session.
 South Dakota, Jan. 3, 1913; 60 days session.
 Tennessee, Jan. 2, 1913; 75 days session.
 Texas, Jan. 14, 1913; 60 days session.
 Utah, Jan. 13, 1913; 60 days session.
 Washington, Jan. 8, 1913; 60 days session.
 West Virginia, Jan. 8, 1913; 45 days session.
 Wisconsin, Jan. 11, 1913; no limit.
 Wyoming, Jan. 10, 1913; 40 days session.

The Bulletin Board

A LETTER FROM DR. SCHELENZ.

Cassel, Germany, Oct. 4, 1912.

Prof. J. H. Beal, General Sec'y A. Ph. A.

Dear Sir: The American Pharmaceutical Association has shown me great honor in my election to honorary membership. I enjoy the distinction heartily and extend my sincere thanks for this great honor. It is quite a satisfaction and pleasure to me that at that distance my work in pharmacy, of which profession I am proud to be a member, has found such honorable recognition. The Association may rest assured that this will encourage me for the rest of my life to exert myself in like manner.

I beg you to extend my heartiest regards to the American Pharmaceutical Association, the true representative of American Pharmacy.

Yours sincerely,

HERMANN SCHELENZ.



CRITICIZES DR. FANTUS' VIEWS

Cleveland, O., Nov. 13, 1912.

Dear Mr. Editor:

Dr. Bernard Fantus in the November issue of THE JOURNAL, under the heading of "How Some Doctors View the U. S. P. and N. F. Propaganda," raises some interesting questions.

He at least gives one the impression that a little commercialism as well as altruism is

prevalent among our brothers of the medical profession. I know it is not the desire of the pharmacist who carries on propaganda work to impose any therapeutic ideas upon the physician, his intention being to give the therapeutic properties of the preparation and no more, for even with our advancement in medical education, we find many physicians woefully ignorant of chemistry and pharmacy. Consequently, many of them may not appreciate that when certain substances are combined, an entirely different chemical compound results, having distinct therapeutic action.

Regarding pleasant administration, would it be possible to speak of this without reference to therapeutics? I wonder if physicians take such serious exception to the host of therapeutic information heaped upon them by the manufacturers of proprietary preparations. I feel that they do not, since the physician has no other means of knowing the therapeutic action of many preparations, and as they are constantly being prescribed by many of our most ethical physicians, it stands to reason that the detail man or the literature has made an impression.

Regarding counter-prescribing and code of ethics, this bug-bear can be laid with a single blow. In fourteen years' active practice in the retail drug business, I have never had occasion to practice, neither have I known a pharmacist who indulged in the practice of counter-prescribing.

There is in every city or town, one pharmacist, at least, who will not counter-prescribe. I think that the physicians might add to their code of ethics, that this man be given their patronage and also that they will avoid as much as possible the prescribing of proprietary preparations, stocking the pharmacists' shelves with row after row of bottles from which two to four ounces of preparation has been used.

It is also annoying to have to send a patient suffering from a progressive disease to the physician each time they call to have a prescription refilled, only to receive an order from the physician to refill original, and then have the patient take his patronage to a less ethical man.

Herein I feel the physician shows his commercial instinct.

The heads of every house manufacturing remedies for the prevention of disease, are made up of pharmacists and it is ever the effort of the practical pharmacist to keep

such goods in good condition and to bring the price within the range of the persons who need them most.

While conditions are far from perfect, still I feel that we are making earnest efforts and great strides to bring about ideal conditions. And, reviewing the propaganda work as a whole, know that it also presents an altruistic side.

T. BERNARD TANNER.

<>

THE A. PH. A. HOME IDEA FAVORABLY RECEIVED.

Boonville, Mo., Nov. 11, 1912.

Dr. J. H. Beal,
Scio, Ohio.

Dear Doctor:

Your editorial in the last JOURNAL is timely and was a splendid one. A home for the A. Ph. A. proceedings and other matter should be established. Already too much valuable material has been lost for the lack of such a repository. Such a project provides a splendid object toward which our surplus energies can be directed, and the accomplishment of which will be appreciated by future generations of pharmacists. Set the ball rolling, Doctor!

Frat. yours,

WM. MITTELBACH.

Waynesburg, Pa., Nov. 8, 1912.

Dr. James H. Beal,
Scio, Ohio.

Dear Doctor Beal:

I just received the JOURNAL, and your article, "The Need of an Association Home," expresses my sentiments to the letter. The A. Ph. A. should have a home by all means, in fact, should have had one long ago. I would suggest that each member give as much as he possibly can toward a fund for that purpose. I am willing to give a ten-spot toward such a fund as a starter. Put the thing through—I feel with you at the wheel it can be accomplished. To say the least, it is certainly deserving of every loyal member's support. With kindest regards, I am,

Yours sincerely,

JAMES S. GLEGHORN.

Philadelphia, Pa., Nov. 15, 1912.

Professor James H. Beal,

Editor Journal of American Pharmaceutical Association.

Dear Professor Beal:

I have read with much interest your admirable editorial upon "The Need of an As-

sociation Home" in the current issue of the JOURNAL. It expressed thoughts I have long had in mind.

In my judgment, the American Pharmaceutical Association will never have that growth and development it can and should have until it has a permanent and properly equipped home.

A home would give the Association greater stability and open the door to larger possibilities. It would promote the objects of the Association, not intermittently, as at present, but continuously, especially along the lines of original scientific research.

Before any movement to establish such a home is started, however, it seems to me that it might be well to decide, tentatively at least, upon the location of the proposed home, and take an account of our resources and liabilities.

This is a big country, and the home should be located in some city reasonably close to the center of population, preferably at one of the great railroad centers of the country, one that can be readily reached by rail from all sections of the country. The plant would need not to be in the costly business part of the city, but in the less expensive residential section.

Your estimate of \$50,000 as the probable cost of the completed structure is reasonable, but if we have to depend simply upon the interest of our permanent funds (which funds amount to \$30,000) together with such appropriations as could be spared from the annual receipts, for money to do research work, the latter would be quite limited in volume.

The best method, it seems to me, would be to enlist the interest of the wealthy philanthropists of the country who give large sums of money to hospitals, in the American Pharmaceutical Association and its scientific work, and secure, if possible, contributions amounting to \$50,000 or more, the same to be held *in trust* by the American Pharmaceutical Association, the interest to be used for the prosecution of pharmaceutical research work.

The Association has \$30,000 available assets. It could buy land and equip a building or buildings for this sum, subject to mortgage, and the interest from the research fund proposed (\$50,000) would yield sufficient income to pay the fixed charges on the property and prosecute research work.

The buildings would be an educational institution, and the city in which they were located would probably be willing to make them tax-free.

The millionaires of this country have given hundreds of thousands of dollars to hospitals. If they could be made to see the *practical* value of research work in pharmacy, in perfecting the tools with which physicians fight disease, and if they could see that every advance in the science and art of pharmacy made the work of hospitals more effective, and meant less pain and less suffering to humanity, I am confident that there would be little hesitancy on their part in promoting pharmaceutical research.

The Rockefeller Institute of Medical Research in New York City, founded by John D. Rockefeller, has done magnificent work for humanity; why not an Institute of Pharmaceutical Research under the auspices of the American Pharmaceutical Association? Such an institution, with its command of the services of the leading pharmaceutical workers of this country, could perform unusual work, and could cooperate with the Rockefeller Institute of Medical Research, and make the work of the latter institution practically effective (i. e. pharmaceutically) with resulting benefit to the medical profession and the public.

The American Pharmaceutical Association has under way a movement to found a William Procter Memorial Fund, with which to create a memorial to William Procter—"The Father of American Pharmacy"—the man who has rendered services of incalculable value to Pharmacy and the American Pharmaceutical Association. The fund now amounts to about \$5000. This is a most worthy movement and should be most heartily supported. But, instead of building a monument in the city of Washington, as has been proposed, why not build with the money a wing of the home suggested, to be known as "the William Procter Memorial Library," or use the interest of the fund to purchase books for such a library, or give fellowship-grants for special research work? Such working applications of the fund would appeal much more to the late William Procter (if he could but know it), with his Quaker instincts, than a monument, which would stand largely for the glorification of himself.

Procter's greatest monument is his monu-

mental work on Pharmacy, and no statue can continue this work; research work only can do so.

The means of American pharmacists are limited, and they have been given most generously in support of American pharmacy. Why not appeal to the millionaires of the country to encourage a work that will be of value to the sick, the suffering and the dying, as long as time shall last?

I am, Very truly yours,

J. W. ENGLAND.

<>

A CORRECTION NOTED.

New Castle, Pa., November 13, 1912.

Dr. James H. Beal,

Scio, Ohio.

My Dear Doctor:

At the Denver meeting in my address as chairman of the Section on Education and Legislation, I said, "Wisconsin has a pure drug law that relates only to flavoring agents, and specifically sets forth a standard for each one." This is an error and my attention has been directed to it by my good friend Mr. Edward Williams, secretary of the State Board of Pharmacy of Wisconsin, and upon further investigation I find that Wisconsin has a pure drug law covering adulteration, and also permits only of a single standard. This law is enforced by the Dairy and Food Commissioner.

Will you kindly publish this in the JOURNAL in order that Wisconsin may be placed in a proper light, and oblige,

Yours truly,

JOHN C. WALLACE.

<>

THE PHARMACIST'S RESPONSIBILITY FOR QUALITY.

Philadelphia, Nov. 6, 1912.

Professor J. H. Beal,

General Sec'y A. Ph. A. and Editor of

Journal, Scio, Ohio.

Dear Professor Beal:

Your valued favor of the first instant, addressed to me as President of the Philadelphia Branch of the American Pharmaceutical Association, was received. I thoroughly agree with you that if pharmacy ever comes into its own it can only be due to the development of the features which the American Pharmaceutical Association especially represents. It is true that the at-

tempt to develop pharmacy along purely commercial lines has been tried for many years, and has been a failure.

The most important asset possessed by the pharmacist is his professional reputation. It distinguishes him from the petty shopkeeper and raises him to a position of dignity in the community.

The success of the merchant is not only measured by the amount of his business and the money he makes, but by the character of his business. The success of the professional man is measured by his knowledge and skill on which largely depends his commercial success. The pharmacist as a petty shopkeeper is of all merchants the most to be pitied, because of his long hours, great responsibility, and poor financial return. On the other hand, if he obtains a reputation for being an expert in drugs and is known by the medical profession and the public for his knowledge and skill in the selection, preparation, preservation and dispensing of medicines, he ranks in the community as a member of the professional class, not as a merchant or tradesman.

The only way for the pharmacist to obtain and maintain a professional reputation is by placing himself in a position where he can guarantee that the medicines he dispenses in prescriptions and over the counter conform to recognized standards for character, quality and strength. Owing to economic conditions, the pharmacist cannot afford to do his own manufacturing, except to a limited extent. The standardization work necessary for assaying finished products and testing them physiologically, requires special laboratory facilities and time which he cannot afford to spend, and such work cannot be conducted economically except on a large scale. The pharmacist is, therefore, forced by conditions to purchase most of his galenic and chemical preparations from large manufacturing houses.

But this does not lessen his personal responsibility as a professional man. The guarantee of the manufacturer is not sufficient. The moment the products of the manufacturer are opened the manufacturer can no longer be held responsible, either by the pharmacist or by the public. The pharmacist's personal guarantee is, therefore, necessary to the welfare of the community. This guarantee is worthless unless the pharmacist takes the trouble to personally in-

investigate the methods of standardization adopted by the manufacturing houses from which he purchases his supplies. He should not take it for granted that these standardization methods are employed or that proper methods are used, but personally inspect the laboratories and methods of these manufacturing houses with which he is dealing.

When the wide variation in the strength of galenical preparations is considered, and it is realized that tinctures, fluidextracts, extracts, and prescriptions compounded from them may vary in strength to such an extent as to make them useless, on one hand, and dangerous to life on the other, when given in doses prescribed in text-books, the importance of this question of standardization looms up as the most important subject of all that the physician and pharmacist has to consider in relation to the materia medica supply business. Preparations of aconite, digitalis, ergot, and strophanthus vary from 0 to 443 per cent., and variations in strength characterize the preparations of most of our important drugs.

The following table shows the variation in the strength before standardization of some U. S. P. drugs and their preparations assayed during the past year in the Mulford laboratories. By standardization, some of the preparations which showed great variation were made definite in strength and thereby rendered instruments of therapeutic precision, instead of being indefinite and uncertain, as they would have been without standardization. In many cases, however, the drug was discarded as inert.

Drugs and Preparations.	No. of Samples Assayed.	Variation.
Aconite Root	16	83 to 193%
Aconite Root F. E.	7	32 to 266%
Belladonna leaf	33	88 to 187%
Cannabis Indica F. E. ...	15	40 to 150%
Calabar Bean	5	61 to 143%
Coca leaf	4	142 to 211%
Colchicum Corm.	9	99 to 151%
Digitalis Tinct.	51	30 to 443%
Ergot	10	57 to 253%
Ergot F. E.	17	0 to 310%
Henbane leaf	29	70 to 292%
Gelsemium Tinct.	7	64 to 156%
Hydrastis	15	112 to 194%
Ipecac	17	62 to 150%
Jalap	13	52 to 138%
Nux Vomica	33	74 to 131%
Stramonium leaf	11	76 to 188%
Strophanthus Tinct.	12	55 to 277%
Squill	13	71 to 153%

It can be readily understood that with such a variation, the physician cannot depend upon obtaining a definite effect from a given dosage unless he prescribes a "standardized" preparation. Suppose, for example, that a druggist who *does not* dispense standardized preparations, fills a physician's prescription, calling for Tr. Digitalis, with a preparation possessing only 30 per cent. of the standard activity. The physician, failing to obtain the desired effect, is required to treble the dosage. In the meantime, the druggist, having replenished his "stock bottle," fills the new prescription with a preparation possessing 443 per cent. of the standard activity. As a result, the patient, instead of receiving a dose possessing therapeutically three times the activity, receives one possessing fifteen (14.7) times the activity of the dose first prescribed.

Variability in the strength of crude drugs has long been a matter of common knowledge and many efforts have been made to standardize them by chemical and physiological methods. But the enormous variability in the pharmacodynamic power and therapeutic usefulness of finished preparations, even though made from assayed and physiologically tested drugs, is a surprising discovery. It was supposed that preparations made from assayed drugs was all that was necessary, but it is now known that the methods of preparation must be taken into account to secure uniformity, and finished products must be standardized to insure their effectiveness as therapeutic agents.

It is advocated by some that galenical preparations shall be substituted by alkaloids and other active principles. While principles are all right in their way, yet they cannot take the place of preparations of the entire drug, as they do not possess the same physiological and therapeutic effects. Morphine cannot take the place of opium, atropine of belladonna, or aconitine of aconite, and the same applies to the preparation of all medicinal plant drugs. Therefore, the only true solution to medicinal plant therapy must be found in the proper selection, preservation and preparation of the medicinal plants themselves, and the proper standardization of the finished products.

I am presenting your letter and my reply to the Philadelphia Branch that the same may appear in the proceedings. This will give an opportunity to bring the entire sub-

ject before the Association for discussion in the pages of the JOURNAL, and I hope that the question of personal responsibility of the pharmacist as a professional man in his relation to the community may be seriously considered before it is too late. As you have stated in your letter, while the exercise of sound commercial practice is, of course, indispensable to business success, commercialism alone cannot save the pharmacist from extinction.

Very truly yours,

F. E. STEWART, PH. G., M. D.
President Philadelphia Branch A. Ph. A.

<>

ARE DRUGGISTS PAYING ATTENTION TO DETERIORATION OF DIGITALIS PREPARATIONS?

Chicago, October 30, 1912.

To the Editor:

I have gleaned here and there a few pointers on the various preparations of digitalis and conclude that the leaves should be obtained fresh every year after the crop has been gathered. The best, so far as I know, are put up by an English firm, Stafford & Sons, and are physiologically standardized. The infusion should be made fresh from day to day and not kept on hand even though it does contain 10 per cent alcohol. Our present tincture deteriorates about 10 per cent per annum. If a higher percentage of alcohol were used, say 70 per cent, there would be little or no loss in active principles.

The powdered extract deteriorates about 8 per cent per annum. This article is one, I think, apt to be overlooked and in such cases would no doubt be a very great detriment to the patients.

WM. GRAY.

<>

DIASTASE CLUB SOUVENIR.

There were distributed among those present at the Denver meeting of the American Pharmaceutical Association a little reprint of the constitution and by-laws of the Diastase Club, an organization made famous by the late Prof. C. S. N. Hallberg. The constitution and by-laws constitute a unique document, drawn in Hallberg's drollest style, which is perhaps the most appropriate souvenir of an organization that automatically

underwent a radical change of nature when Hallberg's spirit fled.

These reprints were made by Francis B. Hays, 100 William street, New York, who will mail one free of charge, as long as the limited supply holds out, to any druggist who sends a request for the same and encloses a stamp. There is no advertising of any kind on the pamphlet.



THOMAS F. MAIN.

Honorary President of the A. P. A.

Few men are as widely known in pharmaceutical circles as the subject of this sketch—Thomas Francis Main—who was elected honorary president of the American Pharmaceutical Association at the recent meeting in Denver.

Mr. Main is of English birth. He came to this country in early youth, entered the drug business, and matriculated as a student of the New York College of Pharmacy while employed in the retail department of Tarrant & Co., graduating with the class of 1871. He remained head of the retail department of Tarrant & Co. for several years, and organized its pharmaceutical laboratory. Later, he

traveled for the concern for a number of years, covering territory in New Jersey, Connecticut and Western Massachusetts. In 1876, he bought an interest in a pharmacy located at New Britain, Conn., which was conducted for two years under the firm name of Thompson & Main.

In 1878 he bought an interest in Tarrant & Co., and re-entered its employ as general superintendent. Later, he became its president, and on the formation of The Tarrant Co., to succeed Tarrant & Co., he became the president and treasurer of the new company.

Mr. Main has been especially active in the wholesale and manufacturing interests of pharmacy. He became a member of the National Wholesale Druggists' Association in 1883 and has had a potent voice in the direction of its activities ever since, serving on numerous committees and as its president in 1894-95.

In his annual address as president of the N. W. D. A., Mr. Main said, with reference to the work of the National Wholesale Druggists' Association: "Our National Wholesale Druggists' Association has been of incalculable benefit to its members in the correction of trade abuses, and in the cultivation of an era of friendly competition. Its achievements in the past are matters of record; its future is in your hands, and will be whatever you choose to make it. At the beginning of my term I ventured to remind you that the honor of the Association was in the keeping of the individual members. If in the future the individual member bears this in mind and governs his actions accordingly, if the Association as a whole fearlessly grapples with the problems of trade that confront it from time to time, if freedom of discussion prevails and united action follows, and if in acting the individual is willing to waive somewhat his individual interest for the common good, then this Association may expect to retain its present proud position as the leading trade organization of America."

These were his ideals for the National Wholesale Druggists' Association, and he has labored in season and out of season to promote them. He was chairman of the Committee on Fire Insurance of the N. W. D. A., in 1903-4 and 1904-5; his report of the latter year containing a "list of hazardous drugs with suggestions as to handling and storage;" "hints on how to best handle a drug house so as to properly extinguish a fire if one oc-

curred," and "how to organize a fire brigade in an individual warehouse." In 1906-10 he was chairman of the special committee of this organization on standards and tests of the U. S. P. and N. F.

Mr. Main has taken a deep interest in his alma mater, becoming a member of the New York College of Pharmacy in the early '70s, and serving it in the capacity of trustee or other officer ever since. He was one of the founders of the Alumni Association of this college; has served as its treasurer and president, and attended the meeting of the American Pharmaceutical Association held in Cleveland in 1872 as a delegate from the Alumni Association, at which time he became a member of the American Pharmaceutical Association.

For the past forty years, Mr. Main has been a faithful and loyal member of the American Pharmaceutical Association and a frequent attendant of its annual meetings. He recognizes the fact that the Association stands for the highest ideals in American Pharmacy, and represents the interests, not only of retail druggists, but also of all pharmaceutical workers, and has striven in every way to advance the work of the Association into ever widening fields of usefulness.

He early recognized the mutuality of interests between the N. W. D. A. and the A. Ph. A., and in an address delivered before the annual meeting of the American Pharmaceutical Association in 1886, as a representative of the National Wholesale Druggists' Association, he said:

"As you are well aware, between individual members of both Associations, there exist certain intimate relations, and there seems to me to be no reason why the relations between the two Associations should not be very fraternal and close, inasmuch as I find in the articles of your Constitution that one of your principal aims is to regulate the drug markets, to prevent the importation of poor drugs, and to expose sophistication and adulteration. On these grounds both Associations can join hands. I can assure you, in looking after and in elevating the standards of drugs you will be heartily supported by the members of our Association. I have wondered whether the members of this Association realize how the standards of quality in the drug market are regulated by your own demands. If the members of the pharmaceutical profession demand high grades of drugs, the

drug market will most certainly respond; if, on the other hand, they demand goods of low quality, they will certainly get them; but in all your efforts to obtain a high grade of goods and prevent adulterations, you may be sure our Association will most heartily support you and act hand in hand with you."

Personally, Mr. Main is a broad-gauged man of business whose extended experience and sound judgment has ever been at the command of his friends and the organizations with which he has been connected. Genial and most courteous in his relations with his fellow men, he has strong opinions, and yet is most tolerant of the opinions of others. He values character above the dollar, and the hundreds of friends of "Tom Main," as they love to call him, will wish him many, many years of unalloyed happiness and success.

J. W. E.

<>



HENRY W. MERRITT,

President of the National Association of Retail Druggists.

Henry W. Merritt, president-elect of the National Association of Retail Druggists, was born in 1873, at Plains, a suburb of Wilkes-Barre, Pa., where he still makes his home and conducts an up-to-date drug store.

His education was obtained in the public schools of Wilkes-Barre, in a commercial

school, and in a state normal school. He has been an active member of the Pennsylvania State Pharmaceutical Association, and for a number of years president of the Luzerne County, Pa., Druggists' Association.

Like many others who have gained celebrity in pharmacy, his introduction into the drug business was more or less of an accident. His father having taken a drug store as the result of a business deal, young Merritt went into the store to look after his father's interests. This connection gradually lengthened into an apprenticeship, which resulted finally in his becoming a registered pharmacist.

The interest which he manifested in the work of the National Association of Retail Druggists resulted in his election to the Executive Committee of that Association, and the value of the work he did in this capacity eventuated naturally in his election to the presidency at the Milwaukee convention.

The esteem in which he is held by his fellow citizens is illustrated by the following, which is clipped from a Wilkes-Barre newspaper:

"He is a firm believer in the uplift of humanity and his voice and pen are ever ready to take up any crying need. His creed is to do something good for somebody else, and his philosophy of life incorporates the same tenets. An illustration of Mr. Merritt's never shirking an obligation was manifested in the local courthouse two weeks ago. He was drawn on a common pleas jury. Several business men asked to be excused and were accorded the privilege, but Mr. Merritt did not. With fourteen and sixteen hours of work ahead of him each day, it was a difficult matter to keep his desk clear and sit for two weeks listening to monotonous civil trials.

"He was found at his desk by a late traveler long after midnight, at his private work, and explained that his days spent on the jury were retarding his pressing business needs. 'Why don't you get excused as some others?' His reply was characteristic. 'Well, you see,' he answered, 'serving on the jury is a duty that every man owes once a year if called upon to perform; and it is only a small effort in comparison with the immeasurable benefits one derives from living in this great country of ours. No, I don't see how I could conscientiously shift that work to other shoulders.'

"Few communities can boast of citizens more worthy or more devoutly interested in

all that makes for the welfare of its people than Henry W. Merritt."

The N. A. R. D. is to be congratulated upon its wisdom in selecting as its standard-bearer a man so well calculated by his disposition and energy to lead that association to still greater achievements.

Proceedings of the Local Branches

"All papers presented to the Association and its branches shall become the property of the Association, with the understanding that they are not to be published in any other publication than those of the Association, except by consent of the Committee on Publication."—By-Laws, Chapter X, Art. III.

Reports of the meetings of the Local Branches should be mailed to the editor on the day following the meeting, if possible. Minutes should be *plainly* written, or type-written, with wide spaces between the lines. Care should be taken to give proper names correctly, and manuscript should be signed by the reporter.

<>

PITTSBURGH BRANCH.

The Pittsburgh Branch held a very interesting session Friday evening, November 8, for the first time since the election, nearly two years ago, without having President Andrew Campbell, of Greensburg, with his hand on the tiller. Dr. Louis Saalbach, first vice-president, however, guided the craft safely over the shoals of parliamentary usages very satisfactorily. Mr. Campbell thoughtfully sent his regrets that he could not possibly arrange to be present.

Dr. F. J. Blumenschein, chairman of the Committee on Practice, called attention to the dangers involved in the handling of bottles and other containers brought into the pharmacy for refilling from the presence of patients suffering from ailments the nature of which are not known to the dispenser, thereby subjecting him to the possibility of being infected with dangerous disease germs. During the discussion aroused by this statement Dr. Emanuel suggested that the chances were so remote as to be scarcely worthy of serious consideration. B. E. Pritchard, however, cited two instances of local occurrence within the past few years in which death had

resulted from diseases that had been incurred as a result of the practice. One of these being due to smallpox, the other to scarlet fever, which served to give the warning-note sounded by Dr. Blumenschein a more serious ring. The discussion was joined in by Mr. O'Brien and Drs. Koch and Wurdack. Continuing, Dr. Blumenschein said: "Particularly is there necessity for caution when immediately after the refilling of a prescription for gonorrhoea or syphilis, an eye lotion should follow, as sometimes happens, in which event the evil results go further than to the dispenser only." Recent unfortunate happenings have served to call marked attention to the need for especial care being observed in the handling of medicines with closely synonymous names. The numerous creolin preparations, too, were given consideration in Dr. Blumenschein's talk because of the fact that they are so freely dispensed in the drug store, and are not looked upon as being dangerous drugs: in fact one of the most widely exploited preparations of this class, viz: Creolin-Pearson, bears a label conspicuously displayed containing the words "Non-Poisonous." Mr. Young said there are cases on record of deaths traced to the misuse of the latter preparation. The outcome of this discussion was the adoption of a resolution, introduced by Dr. Emanuel and supported by Dr. Koch, instructing the secretary to communicate with the distributors of Creolin-Pearson, calling attention to the erroneous practice of labeling it non-poisonous.

Referring to the query concerning the permanence and availability of the U. S. P. Syrup of Hypophosphites, Dr. Blumenschein held that the content of water present is too great and should be reduced, as that is the cause for its non-keeping quality.

Dr. F. A. Judd delivered a very instructive discourse upon the subject, "The Constituents of Aspidium and Ergot." Dr. Judd dwelt largely upon the difficulties involved by the confusion in the nomenclature of the constituents of the two drugs, and brought out many instances tending to show the necessity for a clearing of the atmosphere surrounding the subject matter pertaining to these remedies as found in our literature. The subject was discussed by Drs. Emanuel, Koch and Blumenschein. The latter suggested that most of the literature upon these drugs was to be found in the writeups ac-

companying the products of manufacturing pharmaceutical houses in the exploiting of their own preparations, which, he said, serves to lead up to the importance of our getting back to Galen in our teachings and leave the proprietaries, which are the chief cause of the discordant conditions noted, go hang, which summing up of the situation was unanimously commended.

The closing hour of the evening's session was given over to the exploitation of "Plants Yielding U. S. P. Drugs Found in Allegheny County," by Dr. J. H. Wurdack, who exhibited more than forty varieties, all of which were of his own gathering during numerous botanizing excursions throughout the vicinity of Pittsburgh. Dr. Wurdack's intimate knowledge of his subject was a surprise to his audience, and his talk was most interestingly instructive. Dr. Wurdack said, "druggists should give more attention to this method of securing diversion, as he knew of nothing more interesting than occasional botanizing trips into the country.

These Branch meetings are held at the College of Pharmacy every second Friday evening of each month during the winter and spring, and are intended to give freely to the druggists, their clerks, and apprentices, valuable information in connection with their calling. Anyone sufficiently interested to come will find a glad welcome.

<>

NASHVILLE BRANCH.

The Nashville Branch of the American Pharmaceutical Association delightfully entertained the druggists of Nashville, together with their wives and sweethearts, with a social get-together-meeting, Thursday evening, November 7, at Bloomstein's Hall on Church street.

The meeting was attended by about sixty people and proved to be one of the most enjoyable meetings of the kind ever held here. Many new links of friendship were formed and a feeling of enthusiasm and good fellowship pervaded the entire meeting.

It is intended that other meetings of this character will be held in the future from time to time in order that the druggists of the city may become better acquainted socially and be better prepared to entertain the 61st annual convention of the American Pharmaceutical Association which will meet here next August.

The following very interesting program was greatly enjoyed:

Introductory remarks by the toastmaster, William R. White.

Piano selection, by Mrs. William R. White.

Address, "The A. Ph. A.," by Dr. J. O. Burge, the local Secretary of the A. Ph. A.

Piano selection, Miss Isabelle Davis.

Address, "Nashville's Debt to the A. Ph. A.," by C. S. Martin, ex-President of the National Wholesale Druggists' Association.

Recitation, by Miss Dorothy Clark.

Short enthusiastic remarks were made by the following members: Dr. E. A. Ruddiman, Professor of Pharmacy at Vanderbilt; M. E. Hutton, member State Board of Pharmacy; E. C. Finch, of Waverly, Tenn., President Tennessee Pharmaceutical Association; J. T. Shannon, Secretary Tennessee Pharmaceutical Association, and Ira B. Clark, Secretary Tennessee Board of Pharmacy.

The remainder of the evening was then devoted to the social features, in which an effort was made to get everybody acquainted. Two courses of dainty refreshments, consisting of ices, fruits, etc., were then served, greatly to the enjoyment of all present.

The regular meeting of the branch was held in Furman Hall at Vanderbilt University at 3 o'clock Nov. 14, with Dr. J. O. Burge in the chair. A very favorable and encouraging report was made by the committee of the entertainment given by the branch to the druggists of the city at Bloomstein's Hall, and it was decided to give another one some time in January or February.

Further plans were discussed for the entertainment of the national convention of the American Pharmaceutical Association, which will meet here next year. Dr. E. A. Ruddiman, chairman of the General Entertainment Committee, appointed the following as chairmen of the sub-committees: Ira B. Clark, membership; M. E. Hutton, finance; Wm. R. White, entertainment.

A communication from the Council of Pharmacy and Chemistry of the American Medical Association was presented, showing some of the work this body is doing in its propaganda for reform in proprietary medicines and in its efforts for a more rational use of medicines. The communication was very

favorably discussed and their work commended.

The next meeting will be held at the same place, Dec. 12, when abstracts reviewing the year's work in pharmacy will be presented.

W. R. WHITE, Secretary.

<>

NEW YORK BRANCH.

A regular meeting of the New York Branch of the American Pharmaceutical Association was held November 11, with President G. C. Dickman in the chair. The reading of the minutes of the previous meeting was omitted. The report of Treasurer Joseph Weinstein was duly received.

With the exception of that of the Committee on the Progress of Pharmacy, no committee reports were presented. Otto Raubenheimer, the chairman of the Committee on the Progress of Pharmacy, gave a number of brief abstracts of articles appearing in recent European pharmacological journals. Among the subjects considered were "Cinchona and Its Galenical Preparations," "The Milk-Curdling Constituent of Salep," "The Manufacture of Santonin in Turkestan," "The Relation of the Chemical Constitution and the Pharmacological Action of Preparations of Antimony," "A New Antidote for Antimony," "Opium and Its Preparations," "Tests of Identity for Tincture of Aloes," "Corks Bleached with Sulphur Dioxide," "Transmutation of Elements," "The Coloring Substance of Egg Yolk," "Milk Preservation with Peroxides," and "The Composition of Oil of Cedar." He also spoke of the necessity of a knowledge of antidotes on the part of the pharmacist and told of a case of poisoning with hydrocyanic acid in which he had successfully used the official antidote for arsenic. Mr. Raubenheimer described briefly some new additions to the materia medica.

In discussing the report of Mr. Raubenheimer, J. L. Mayer said that because there is a variability in the results obtained by different operators in assaying opium, due to the difficulty of completely extracting the drug, the Pharmacopoeia should not assume that the assay showed the exact morphine content. Mr. Mayer referred briefly to the lectures recently given by Sir William Ramsay in Brooklyn.

Secretary Hugh Craig announced that a meeting of the special committee on the cer-

tification of pharmacies with the conferring committee of the county medical society would be held at an early date. The secretary also read a communication from J. H. Beal, the general secretary of the parent organization, in which the branch was reminded that it was benefitted by any efforts put forward by its members to increase the membership of the Association.

Mr. Raubenheimer announced that under the guidance of Prof. William Mansfield, botanical excursions would be conducted every other Sunday. All were invited to join.

Dr. Eugen Unna delivered a short but interesting address on "The Physiological and Chemical Properties of Potassium Chlorate." Chiefly this had to do with opposition which had been voiced by Dr. Prince, of St. Louis, against the use of potassium chlorate in buccal medication, in which it was contended that the salt was not a specific for stomatitis, caused bleeding of the gums, exerted no oxidizing bactericidal effect, and might through its absorption into the blood, act as a systemic poison.

Opposition of a similar sort arose in Germany and Europe generally, several years ago, said the speaker, and had been settled by the investigations of Kroner, Levine, Binz, Bachem and others. These investigators, continued the speaker, showed that only about 4 per cent. of the chlorate was left in the mouth after the use of a gargle or mouth wash containing the salt, that this was reduced by the buccal bacteria with the liberation of the oxygen, that susceptibility to the poisoning effect of the chlorate is an idiosyncrasy, as the salt is naturally absorbed very slowly; that the cumulative effect was negligible; and that only after long-continued use internally was there any untoward effect upon the kidneys.

Dr. Nodine, a dentist, in discussing Dr. Unna's remarks, said that the views of Dr. Price were not shared by very many of the leaders in the dental profession, although Buckley, in the latest edition of his work on dental surgery, advises caution in the use of dentifrices containing potassium chlorate. In a work by Blain, with whom Dr. Price collaborated, the use of the chlorate in stomatitis was, according to the speaker, advised. Dr. Nodine stated that as much as 740 grains of potassium chlorate had been taken in thirteen hours without untoward effect, yet he did not

wish to be considered as thinking the salt entirely harmless.

Messrs. Lascoff, McElheine, Raubenheimer, Oates, and Niece joined in the discussion of Dr. Unna's address. None of the speakers was of the opinion that the use of potassium chlorate in gargles, mouth washes and the like, was dangerous.

Adjournment was taken at 12:20 o'clock until December 9.

HUGH CRAIG, Sec'y.



CITY OF WASHINGTON BRANCH

The regular November meeting of the local branch of the American Pharmaceutical Association was held Wednesday, November 13, at the National College of Pharmacy.

In the absence of President Flemer, Dr. Lyman F. Kebler, the vice-president, presided. Communications from the president of the Association and from the general secretary were read, received and commented upon.

Dr. S. L. Hilton then presented and read a paper on "The Habit-forming Drugs," and pointed out very clearly the necessity for further legislation to regulate interstate commerce with regard to morphine, cocaine, and other habit-forming drugs. He also pointed out the alarming increase in the manufacture and sale of heroin and codeine and other products of a similar nature, such as dionin, etc. The adequacy of the District of Columbia law was clearly shown, Mr. Hilton stated, by the holdings of the police court in this District wherein it has been decided that heroin is a salt or derivative of morphine, and, therefore, its sale without a prescription is prohibited.

A very interesting discussion relative to the conditions existing in various states with regard to the sale of narcotics then followed.



BALTIMORE BRANCH.

The regular monthly meeting of the Branch was held on Thursday evening, November 21, 1912, at the Medical and Surgical Faculty Hall. In view of the importance of the address of the evening, invitations were sent to all the retail, wholesale and manufacturing pharmacists of the city, and the attendance was very gratifying.

President Kelly in opening the meeting, welcomed those who were not members and said that he could not forego the opportunity

afforded to remind them of the great work which the A. Ph. A. had done and was doing for pharmacy, and to urge them to assist in this work at least to the extent of joining. No one should wait for a personal invitation and the Membership Committee only asked for an opportunity to present their claims. He regretted that American Pharmacy was not unified in one great national association but until it is every one connected with the profession in any way should feel it a privilege as well as a duty to support those associations at least, in which he is interested.

He explained that the officials of the Branch felt that the meeting could not be devoted to a more important or interesting subject than that on which Dr. Caspari, the Food and Drug Commissioner of Maryland, had kindly volunteered to address them, "The Condition of Pharmaceutical Products as He Had Found Them in the State and the Requirements of the Laws in Relation Thereto," and introduced the speaker.

Dr. Caspari said that the Maryland Food and Drug Law had now been in effect for more than two years and that the Board of Health of Maryland, who are charged with the enforcement of the law had so far attempted to conduct an educational campaign in collecting and examining only simple preparations and in dealing with those whose products were found illegal in only calling them before the Referee Committee of the Board for explanation and to be warned against repeated infractions of the law. The Board now felt that after this long period of preparation, their duty to the public demanded that in the future, repeated violation of the law should be punished more severely. To be charged with a criminal offence was a serious matter and he was glad of this opportunity to explain the conditions to pharmacists frankly.

While he was glad also to repeat his previous statement that in not one instance had it been shown that fraud was intended or was for pecuniary gain, it must be remembered that the law was for the protection of the consumer and that consequently, excuses for illegal product could not be accepted indefinitely on the ground of educating the seller. His experience as a pharmacist and as the Commissioner had convinced him that there was no valid excuse for a pharmacist who in the future sold illegal goods for it had been shown that they could be satisfac-

tortily made by the official processes and that those which the pharmacist was not equipped to make could be easily purchased of legal standard. If satisfactory articles could either be easily made or purchased there must be some reason for the considerable percentage of illegal preparations so far found as was shown by a list of them which he read and it behooved the pharmacist to find the reason promptly and to as promptly remedy it. The percentage of unsatisfactory products had decreased due, he was sure, to the desire of the average pharmacist to comply fully with the requirements of the law and to the educational policy of the Board of Health, but there was still ground for considerable improvement.

The majority of those called before the Referee Committee, he was sorry to say, had given all manner of excuses and but few were honest enough with themselves to admit that the error might be or was theirs and the majority of these excuses was to the effect either that the clerk had made a mistake or that the ingredient or ingredients used in the unsatisfactory product was illegal as supplied to them. As to the first excuse he was prepared to say that in a very large majority of cases it was not valid because he had had some of these ingredients examined and because wholesalers and manufacturers had the facilities and realized that it would be suicidal for them to supply inferior goods. For instance, a considerable percentage of such a simple and easily prepared preparation as Tincture of Iron had been found deficient or excessive in both iron and alcoholic strength, and the excuse was given by many that their tinctures had been made from solutions supplied by a jobber or manufacturer; he had thereupon purchased directly and indirectly from the sixteen jobbers and manufacturers doing the bulk of the business in the state, samples of the solution of iron chloride and upon examining them had found all of them of such strength as to yield by the directions given a satisfactory product.

The reason for such conditions he was therefore reluctantly forced to conclude to be due to unintentional thoughtfulness or carelessness on the part of pharmacists and while he regretted to speak so plainly he did so only with the view of assisting and warning them. This cause of trouble was easily remediable and this should be a cause of encouragement to every one. Some pharmacists

he had found possessing no standard works or using those long out of date and unofficial; some others were not sufficiently conversant with weights, measure, specific gravity, etc., as to be accurate and otherwise were not careful enough to carry out the directions given. Several illustrations were given. Such faults as these should be overcome at once and he was sure that they had been indulged in only through thoughtless carelessness and not with any intent to defraud the consumer as in some cases the result was to the pharmacist's financial loss, though recently a few samples had been collected which had been evidently prepared to fool the Board and a few had excessively charged the agents of the Board for samples. One Tincture of Iodine had been found to contain about 30 per cent of Iodine and the supplier had found it unwise to attempt to fool the Board with a superstandard product as such was as illegal as sub-standard ones.

In conclusion he said that while every precaution was taken to insure accurate examinations of samples in the laboratories of the Board, mistakes might happen there as with pharmacists, and every one interested had the right to question their accuracy and to have any competent chemist check the work in every particular in conjunction with their chemists, and that the Board welcomed such checks if made with honest intent as they were only interested in seeing justice done and in assisting every one to comply with the law which was made by the people themselves. The Board and the Commissioner had been severely criticized, however, for their work, as they fully expected to be, and in so doing many had inquired why so much attention should be given to such unimportant items as Lime Water and Seidlitz Powders. In his opinion they were far from being unimportant as they were so widely used and the Board had purposely chosen these as they wished to pass from simple to complex preparation in justice to and as educational to the pharmacists.

Mr. Caspari volunteered to give any further information that he could and answered many detailed inquiries. Of importance was one to the effect that while a pharmacist might employ assayed and guaranteed ingredients in his preparation this did not free him from the responsibility of insuring that the finished product was correct. For instance, standardized and guaranteed

opium might be used in the preparation of the correct amount of the Tincture of Opium but the operator should further insure the correctness of the tincture by assaying it as was directed and which was best or by proving the complete extraction of the marc. Another that guarantees from firms non-resident in Maryland could not be accepted as the givers could not be reached, and that most givers of a guarantee held that it only applied to goods in their original containers and was not valid after the container was opened.

Dr. H. P. Hynson congratulated the Branch on the attention and assured Dr. Caspari that his purpose in speaking as he had was fully understood and appreciated. As a retail pharmacist he fully agreed with the view that illegal products were the result largely of a lack of carefulness and his experience as a teacher further confirmed this opinion, as he had found the difficulty of impressing the great and growing need for carefulness in both small and large matters his hardest task with his students, and men were only grown up boys.

President Kelly thanked Mr. Caspari for his helpful address and said that the Branch was also fortunate in the attendance of the executive officers of two local associations with which the Branch was glad to cooperate—The Maryland Pharmaceutical Association and The Baltimore Retail Druggists Association—and he invited Mr. D. P. Schindel, of Hagerstown, the President of the former, and Mr. Lee Williamson, of Baltimore, the Vice-President of the latter association, to speak.

Mr. Schindel said that the association that he represented had cooperated enthusiastically in every movement to insure the proper enforcement of the Food and Drug Law and the strict protection of the interests of the public in this respect, and he was sure that this meeting of the Branch would assist greatly in securing this desired result.

Dr. Williamson said that his association was glad and anxious to cooperate in any way possible. He thought that pharmacists, while they should deplore and promptly remedy the conditions of which the Commissioner had spoken, could be proud that not one of

them had been guilty of either intentional fraud or fraud for pecuniary gain. This evidenced that pharmacists were true at heart and he thanked Dr. Caspari for his expression of confidence in the integrity of purpose of the members of the profession.

The Branch, President Kelly said, was anxious to be of assistance to the pharmacists of the city and the state and that their programs would be arranged with this purpose in view. Their meetings are held the third Thursday of each month from September to May and that all connected with pharmacy in any way were welcome and were requested to consider themselves invited to these meetings whether they received an official notice or not.

The meeting was then adjourned.

E. W. HOBSON, Sec.-Treas.



CHICAGO BRANCH.

The November meeting of the Chicago Branch of the A. Ph. A. was held Tuesday evening, November 26, at the University of Illinois School of Pharmacy, and was well attended, there being about forty members and friends of the Association present.

Mr. L. E. Warren, Ph. C., gave a very interesting address on the subject, "Some Activities of the American Medical Association and Their Value to Pharmacists." The lecture dealt with the work of the A. M. A. in general and of the Council on Pharmacy and Chemistry in particular and closed with an expose of various fakes and nostrums. At the close of the lecture a vote of thanks was given to Mr. Warren, and a discussion of the subject in its relation to pharmacy followed. Dr. Bernard Fantus, Mr. H. C. Christensen, Secretary Day, Mr. I. A. Becker and Mr. C. A. Storer and others took part in the discussion. At its close Mr. Warren was requested to present his paper for publication in the Journal.

The Branch then adjourned to meet again on Tuesday evening, December 19, when Dr. Bernard Fantus will deliver a lecture on "Candy Medication."

At the December meeting the nominations for officers for the year 1913 will be made.

Obituaries and Memorials

Persons having information of the death of members of the A. Ph. A. are requested to send the same promptly to J. W. England, 415 N. 33d St., Philadelphia, Pa. Information as to the age, activities in pharmacy, family, etc., of the deceased should be as complete as possible. When convenient a cabinet photograph should accompany data.



J. ARTHUR BEAN.

J. Arthur Bean, of Somerville, Mass., was born June 16, 1872, and died on November 10, 1912, as the result of an automobile accident in Wellesley, Mass., one month ago. The car in which Mr. Bean was riding came into collision with another and he was thrown out violently, receiving fractures of both legs. The direct cause of his death was stated to be brain emboli.

Mr. Bean was the proprietor of two drug stores in Somerville and he was planning to establish his third store. He took an exceedingly active interest in organization work. He became a member of the American Pharmaceutical Association in 1910. He was Chairman of the Entertainment Committee at the Boston Meeting of the Association in 1911, and his courtesy and genial personality won the friendship of all. He was the New England member of the Executive Committee of the N. A. R. D.; ex-President of the Boston Druggist's Association; a member of the Massachusetts State Pharmaceutical Association, and of the Massachusetts College of Pharmacy; and Chairman of the Committee on U. S. P. and N. F. Propaganda of the Boston Association of Retail Druggists. He was also a Mason and Knight Templar.

Of him N. A. R. D. Notes writes:

"Jolly, loyal, true—Arthur scattered sunshine while here; he was every good man's friend, every just cause's champion, many a waiting opportunity's master hand. Passing on, he leaves behind a memory sweet with kindness, good cheer and helpfulness. Peace to his spirit."

The funeral services were held at St. Thomas's Episcopal Church in Somerville, the edifice being crowded with the relatives and friends of the deceased. The pallbearers

were: Frank F. Ernst, representing the Boston Association of Retail Druggists; C. Herbert Packard, of the Massachusetts College of Pharmacy; Fred L. Carter, Jr., representing the Boston Druggists' Association; J. F. Guerin, Secretary of the Massachusetts State Pharmaceutical Association; F. A. Hubbard, a former member of the Board of Pharmacy, and E. E. Marshall. Interment of the body was had at Penacook, N. H.

Mr. Bean leaves a wife and ten-year-old son, and the deepest sympathy of his many friends in the American Pharmaceutical Association will go out to them in their sad bereavement.

J. W. E.



FREDERICK A. BRECHT.

Frederick Adolph Brecht, the first graduate in pharmacy to locate in Yankton, S. D., is dead, following a stroke of paralysis. He was born in Leipsic, Germany, graduating from St. Thomas College and the University of Leipsic. He studied the drug business and then returned to the University of Leipsic to study medicine. In 1869 he settled in Yankton, and in 1874 commenced the drug business with the late L. M. Purdy, as his partner, the firm name being Purdy & Brecht. Following the death of Mr. Purdy, he continued the business with his sons, Dr. Adolph Brecht and Paul Brecht. He was a musician of unusual talent, had sung before Kaiser William I, and was an accomplished pianist. He was a 33d degree Mason, the funeral being conducted by the Masonic order.

He joined the American Pharmaceutical Association in 1895.

J. W. E.

Council Business

COUNCIL LETTER No. 2.

Philadelphia, November 18, 1912.

To the Members of the Council:

Motion No. 1 (Purchase of Pamphlet Cases), and *Motion No. 2 (Election of Members; applications Nos. 1-17)* have each received a majority of affirmative votes.

The following communication has been received from Franklin M. Apple:

"Concerning the advisability of publishing in book form the formulæ thus far collected by Chairman Raubenheimer will state

that I deem it wisest to wait until after the publication of the next issues of the N. E. and U. S. P., but assuring the revisers thereof that a Recipe Book *will be* issued by the A. Ph. A., so that they will know that provision will be made to preserve the formulae that they deem to be of such a nature as not to warrant their retention or admission into those standard works on pharmacy. The next issues of the U. S. P. and N. E. should be as near perfection as possible, hence provision must be made for the preservation of formulae that would be objectionable, from various reasons, to medical men, and to the U. S. authorities, for legal reasons.

To issue several revisions of the proposed new book of formulae within a short space of time would be a mistake for many reasons; hence, I think it wisest to wait until sufficient material is on hand to guarantee a book that will prove so valuable that every progressive pharmacist (drug store owner) will not care to be without a copy thereof.

We must look at the materialistic side of this question as well as the utilitarian—for our Association has not unlimited funds with which to make this venture. As it will not be a legal standard for the U. S. or the state authorities to enforce, the book will have to depend entirely upon its merits to make it a success financially, hence the necessity for making it an extraordinary valuable collection of formulae."

Thomas F. Main writes:

"I am in favor of the publication of an A. Ph. A. Recipe Book just as soon as the members of the Council feel that it is opportune to do so."

Frederick J. Wulling writes:

"I have not been able to give the matter of the publication of a recipe book by the Association much thought. It is of course desirable to establish as far as possible uniformity in non-official preparations and on the whole I am inclined to favor the proposition. It seems to me the next step is to determine upon the scope and details of publication and to direct inquiries into the financial aspect of the question. Possibly a Council committee to study the matter and recommend a procedure would be advisable."

The following communication from P. A. Mandabach, of Columbus, secretary of the National Association of Drug Clerks, has been received by General Secretary Beal, and is transmitted by him to the Council:

"Since writing you a few days ago concerning the National Home, it has been decided that we shall take up the matter of selecting the National Trusteeship from among the names suggested or submitted by the Executive Board of your Association, instead of writing the officers individually, wherein we expected to ask them whether

or not they would accept, therefore, trust that you will submit the names of at least three members from among your past and present officers."

Article 12, Section IV of the constitution of this Association provides:

"That a trusteeship of five members shall be appointed from among the officers and past officers of kindred Associations, and who shall manage the property of the Home and the appropriation of the fund, and make all contracts, purchases, and disbursements. Bond shall be given by the Secretary and the Treasurer of the trusteeship in such sum as may be designated by and Board of Trustees. Said trustees shall render quarterly reports of the financial and general conditions of the home to this and other Associations."

Again, a special resolution was adopted at the annual convention, which provides that the first Board of Trustees shall be selected as follows: One member each from the past or present officers of N. A. R. D., A. Ph. A., N. W. D. A., and two from among past and present officers of N. A. D. C., who shall serve, respectively, for a period of one, two, three, four and five years, therefore, there will be annually one vacancy which shall be filled, respectively, from the aforesaid Association.

Article 8, of the constitution of this Association provides that all funds, subscribed, endowed or donated for the National Home, shall be placed in the hands of the National Trustee Board. All annual dues accruing from the associate membership of the N. A. D. C., will also be set aside for the National Home Fund. A percentage of the dues of the active membership of this Association shall also be set aside annually for the aforesaid fund.

We trust that this explanation will be clear to you, and that you will lend us your cooperation and support in the consummation of this charitable work, as the intent and purpose of this project as a whole is for the direct benefit of both employer and employee, and for the orphaned dependants thereof."

It will be recalled that at the meeting of the Council, held August 21, 1912, at Denver, a communication from the National Association of Pharmacologists (National Association of Drug Clerks) was presented, submitting a resolution for the founding of a National Apothecaries' Home. This was referred to the House of Delegates, which reported to the Council that:

"The Committee on Resolutions of the House of Delegates can see the benefit of a home for indigent druggists and drug clerks as proposed by the National Association of Pharmacologists, if such can be properly established and maintained, but we do not believe that the A. Ph. A. should become

partially responsible for such an institution by appointing any members to its Board of Trustees, therefore we recommend that no appointment of members to such a board be made at this time."

The recommendation was received, but no action was taken by the Council.

Motion No. 3 (Time of 1913 Annual Meeting at Nashville). Moved by J. H. Beal, seconded by J. O. Burge, that the sixty-first annual meeting at Nashville be held during the week beginning August 25, 1913.

Motion No. 4 (Election of members). You are requested to vote on the following applications for membership:

No. 18. Harry Willson DeCoster, 304 Boston, St., Lynn, Mass., rec. by Linus D. Drury and Adolf H. Aekermann.

No. 19. J. J. Nichols, 112 W. Sidney Ave., Mt. Vernon, N. Y., rec. by J. Roemer and Hugh Craig.

No. 20. William A. Holstrom, Huron, S. Dakota, rec. by E. C. Bent and J. H. Beal.

No. 21. David Benjamin Yaffa, 191 Prospect Park West, Brooklyn, N. Y., rec. by Caswell A. Mayo and H. M. Whelpley.

No. 22. George Whipple Hubbard, 1118 First Ave., Nashville, Tenn., rec. by J. O. Burge and William R. White.

No. 23. Orval W. Lee, 54 E. Fiftieth st., First Apt., Chicago, Ill., rec. by Wm. B. Day and A. H. Clark.

No. 24. William Irby Gates, Gates Building, Whiteville, Tenn., rec. by J. O. Burge and William R. White.

No. 25. George W. Luft, 140 Claremont Ave., New York, N. Y., rec. by Wm. C. Anderson and Joseph Weinstein.

No. 26. Randal John Western Jones, 502 Anita St., Houston, Texas, rec. by E. G. Eberle and C. A. Duncan.

No. 27. John A. Borneman, 159 Seminole Ave., Norwood, Del. Co., Pa., rec. by W. A. Pearson and J. W. England.

No. 28. Francis Marion Bass, Delherd, Tenn., rec. by Ira B. Clark and Moses Cook.

No. 29. Robert Simpson, 201 N. Thirty-sixth St., Philadelphia, Pa., rec. by J. W. England and F. S. McCartney.

J. W. ENGLAND,
Secretary of the Council.

<>

COUNCIL LETTER No. 3.

Philadelphia, November 19, 1912.

To the Members of the Council:

The following letter has been received by the secretary of the Council:

"To the Council of the American Pharmaceutical Association.

Gentlemen: The object of this communication is to enter an earnest plea for

the conservation of the Report on the Progress of Pharmacy as a concrete publication of the Association in the form in which it has appeared in our Annual Proceedings for over half a century. My long connection with the making of this report beginning with the years 1866 and 1867 and practically continuous from 1873 to the present, with only a brief interval, makes it a matter of personal concern and naturally leads me to oppose any change that cannot be demonstrated as being an actual improvement, either of the report itself or in its bearings on the welfare and usefulness of the Association.

Eliminating my personal bias, however, I believe that I am justified in strenuously opposing a fragmentary publication of abstracts from articles appearing in the pharmaceutical, chemical and medical journals during a given period as proposed at Denver, in lieu of a well arranged and compact report, bound in the usual form, provided with a carefully prepared index, and accompanied only by statutory matter pertaining to the Association, lists of officers, committees, and members, etc., as outlined and decided at Boston.

Even the intermediary proposition, to publish the report in four installments covering a full year, in consecutive numbers of the "Journal," did not appeal to me, but the more recent action has put this out of question, and needs no consideration at this time.

Beginning with the year 1857 when the first systematic report on the progress of pharmacy was made by a committee headed by the late Professor Wm. Procter, Jr., the report was augmented and improved from year to year, until in the course of time the appearance of the annual volume of Proceedings was looked for with impatience both by the members with a scientific trend, who could use the information contained therein in research work, and by that far larger contingent of members, who in pursuit of their calling as practical pharmacists found it to be a useful work of reference, efficiently supplementing for them the few standard books of reference commonly found in an average pharmacy.

To the latter class also belong those who look forward to the appearance of the report, not so much because of the direct advantages as a work of reference, but for the purpose of increasing their general knowledge, and I could name some of our older members who have assured me at different times, that they made it a practice to read the report from beginning to end as an intellectual pastime, as soon as it became available.

It is little wonder therefore that impatience was manifested by both classes of members when the appearance of the Proceedings was delayed beyond, what was considered, a reasonable limit, the defection being usually attributed to the failure of the reporter to supply the finished manu-

script at the annual meeting—a question which I do not propose to discuss, however, except to say: "There are a few that know, some that think they know, and a large contingent that do not know," what it means to select and make from the vast store of material contained in pharmaceutical and kindred journals a report that shall satisfy the progress made during a given period and shall satisfy the individual demands and meet with the approval of a representative contingent of its readers.

What my aim has been in this direction. I have outlined in the prefatory remarks to the first installment of abstracts from the Report for 1911, in the January, (1912) number of the Journal of the Association. I shall confine my concluding remarks, therefore, to point out some of the difficulties, incongruities and objections, as I conceive them, if it is insisted that the recently adopted plan to publish the Report on the Progress of Pharmacy in monthly installments shall be carried into effect.

In order to furnish the abstracts required for each monthly issue of the Journal with unfailing regularity, and the assurance that they shall keep pace with the progress made from month to month during any single year, it will become necessary that the reporter give his undivided attention to this work; all other occupations must be subordinate to this work and must of necessity be relinquished if they interfere in a serious degree with the prompt supply of copy.

Supposing this to be satisfactorily arranged, we are confronted with conditions that are far more difficult of adjustment. Mental strain, temperamental moods, illness, are factors that must be taken into account, and may at times make it impossible to do effective work which under normal conditions would be comparatively easy of accomplishment. Moreover, the opportunity to catch up with delayed work, which is quite possible when making an annual report, becomes a practical impossibility when monthly reports are required.

Assuming, however, that these difficulties (and others might be mentioned) have been overcome, and we have succeeded in making monthly reports that fairly well represent the progress of pharmacy made during the year, what have we gained? We have simply substituted a number of separate reports in which a diversity of subjects, liable to duplication, follow each other incongruously—at best without more than a superficial attempt of systematic arrangement—for a well-ordered and properly arranged annual report, in a bound volume, properly indexed, and in this concrete form always available on the library shelf; whereas the twelve fragmentary reports, any one of which is liable to be misplaced or lost, and unprovided with an index until the last number has appeared, are in no respect different—except in scope and volume—from the abstracts usually contained in the current pharmaceutical journals.

Other incongruities might be pointed out and other objections brought forward, not the least of which is the fact that the Report on the Progress of Pharmacy, which has heretofore proven a most valuable asset for propaganda work, will lose its identity and usefulness unless we continue to present it in the concrete form to which the members of the Association have become accustomed, and to which they are entitled.

Respectfully submitted,

C. LEWIS DIEHL.

Louisville, Ky., Nov. 15, 1912.

J. W. ENGLAND,

Secretary of the Council.

Changes of Address

All changes of address of members should be sent to the General Secretary promptly.

The Association will not be responsible for non-delivery of the Annual Volume or Year Book, or of the JOURNAL unless notice of change of address is received before shipment or mailing.

Both the old and the new address should be given, thus:

HENRY MILTON,

From 2542 Albion Place, St. Louis, Mo.

To 278 Dartmouth St., Boston, Mass.

Titles or degrees to be used in publications or in the official records should be given, and names should be *plainly* written, or type-written.

<>

ALBERTS, M. LEE,

From Gary, Ind.

To Lowell, Ind.

McMAHON, J. M.,

From Brooklyn, N. Y.

To 2737 E. 26th St., Sheepshead Bay, N. Y.

NOAK, R. S.,

From San Francisco, Cal.

To National Cemetery, Jefferson Barracks, Missouri.

COLE, EDW.,

From Rizal, P. I.

To Columbus Barracks, Columbus, Ohio.

RUDDIMAN, E. A.

From Vanderbilt Univ.

To 1916 Adelica St., Nashville, Tenn.

SCHMIDT, F. M.,

From 1007 Schiller Bldg.

To 1612 Mallery Bldg., Chicago, Ill.

SISS, LEO C.,

From Hammond, La.

To Alexandria, La.

STURMER, J. W.,
From Lafayette, Ind.
To 17th and Cherry Sts., Philadelphia, Pa.

WHIPPLE, MATHEW,
From Chicago, Ill.
To 506 S. 4th Ave., Maywood, Ills.

MAY, LOUIS,
From Brooklyn, N. Y.
To 601 W. 191st St., New York, N. Y.

STRAWN, MAY E.,
From Columbus, Ohio.
To Waynesville, Ohio.

HOLMES, R. C.,
From 1 Monroc Place.
To 281 Green Ave., care Briston & Co.,
Brooklyn, N. Y.

HERBSTER, A. L.,
From 229 National St.,
To 537 Raywood St., Elgin Ill.

BROWN, CHAS. L.,
From care Surgeon Gen. Hosp.
To Letterman Gen. Hosp., San Francisco,
Cal.

BETTIS, JAMES L.,
From Ft. Mackenzie, Wyo.
To U. S. A. Hosp., Marfa, Texas.

DUERING, H. C.,
From St. Louis, Mo.
To Lubbock, Texas.

GUERRERO, JUAN C.,
From Encinal, Texas.
To Box 294, Laredo, Texas.

WILLIAMS, A. R.
From Lead, S. Dak.
To Sturgis, S. Dak.

UNITED STATES PUBLIC HEALTH SERVICE.

(Recent changes in Pharmacists' Assignments, etc.)

Osborn, John L., Pharmacist. Relieved from duty at Baltimore, Md., and directed to proceed to Philadelphia, Pa., and report to Surgeon W. G. Stimpson for duty, October 7, 1912.

Holt, E. M., Pharmacist. Directed to proceed to the South Atlantic Quarantine Station to superintend the packing and disposition of the property preparatory to closing the station. October 9, 1912.

Gray, Ralph E., Pharmacist. Directed to proceed to Cairo, Ill., and report to the Medical Officer in Command, Marine Hospital, for duty and assignment to quarters. October 17, 1912.

Wolfe, J. A., Pharmacist. Upon being relieved by Pharmacist Ralph E. Gray, directed

to proceed to Pensacola Quarantine Station, Pensacola, Fla., and report to the Acting Assistant Surgeon in charge for duty and assignment to quarters. October 17, 1912.

APPOINTMENT.

Ralph E. Gray appointed pharmacist of the third class, October 15, 1912.

Hunt, Reid, Professor of Pharmacology. Upon request of the Secretary of the Interior, directed to proceed to Wilkes Barre, Pa., to accompany a committee formed by the Bureau of Mines through the coal fields of Pennsylvania, for investigations in connection with resuscitation of persons overcome by poisonous gases November 6, 1912.

THE GOOD OLD FIRM.

HORATIO WINSLOW.

The most remarkable firm I know
Is Pinchbeck, Glitter, McSham and Show:
A versatile firm that won't confine
Its arts and crafts to a single line,
But wherever there's money in sight, or
fame,
The firm is up and after the same;
And often as not it takes the prize
Away from the clever and good and wise.
("And that's the way that the prize *should*
go!")
Say Pinchbeck, Glitter, McSham and Show.

They'll act your drama, or paint the scenes,
Or write your poems, or sketch marines,
Or take your lawsuit and win—maybe!
Or operate on you for housemaid's knee;
They'll pass you laws of the latest brand,
Command your army or lead your band;
In fact, they're willing to undertake
A bridge, a book, or a wedding cake.
("Or anything anywhere—high or low!")
Say Pinchbeck, Glitter, McSham and Show.

But though the firm is extremely old—
Runs back to Adam,—or so I'm told,—
It's only fair to the young to state
That none of its products are classed as
great.

It's tricky, eager, and shrewd and fast,
But somehow or other its makes don't last;
And all that is oldest and best on earth
Bears the stamp of the partners Work &
Worth.

("But our way's better; it's not so slow,")
Say Pinchbeck, Glitter, McSham and Show.

—*The Youths Companion*.

The Mulford Bacterins

The Mulford Bacterins (Bacterial Vaccines) for therapeutic use are supplied in packages containing 4 aseptic, glass syringes, ready for immediate use, labeled A, B, C and D, respectively.

The number of killed bacteria contained in syringe B is double the contents of syringe A, syringe C is double the contents of syringe B; syringe D is double the contents of syringe C.

Each syringe is graduated into fifths, so that any divided dose of the contained bacterin may be instantly measured.

THE MULFORD BACTERIN SYRINGE



LIST OF BACTERINS

(Bacterial Vaccines)

- Acne Bacterin** (Acne Vaccine) in 4 syringes. A contains 25, B 50, C 100, D 200 million killed bacteria.
- Coli Bacterin** (B. Coli Vaccine) in 4 syringes. A contains 50, B 100, C 200, D 400 million killed bacteria.
- Influenza Bacterin** (Influenza Vaccine Mixed) See price-list for bacterial contents.
- Neisser Bacterin** (Gonococcic Vaccine) in 4 syringes. A contains 50, B 100, C 200, D 400 million killed bacteria.
- Neisser Bacterin Mixed** (Gonococcic Vaccine Mixed) See price-list for bacterial contents.
- Pneumo-Bacterin** (Pneumococcic Vaccine) in 4 syringes. A contains 50, B 100, C 200, D 400 million killed bacteria.
- Pneumo-Bacterin Mixed** (Pneumococcic Vaccine Mixed) See price-list for bacterial contents.
- Scarlatina Bacterin** (Scarlet Fever Vaccine) in 4 syringes. A contains 50, B 100, C 200, D 400 million killed bacteria.
- Staphylo-Bacterin** (Staphylococcic Vaccine) in 4 syringes. A contains 250, B 500, C 1000, D 2000 million killed bacteria.
- Staphylo-Bacterin Mixed** (Staphylococcic Vaccine Mixed) See price-list for bacterial contents.
- Staphylo-Acne Bacterin** (Staphylo-Acne Vaccine) See price-list for bacterial contents.
- Staphylo-Albus Bacterin** (Staphylo-Albus Vaccine) in 4 syringes. A contains 250, B 500, C 1000, D 2000 million killed bacteria.
- Staphylo-Aureus Bacterin** (Staphylo-Aureus Vaccine) in 4 syringes. A contains 250, B 500, C 1000, D 2000 million killed bacteria.
- Staphylo-Strepto-Bacterin Mixed.** See price-list for bacterial contents.
- Strepto-Bacterin** (Streptococcic Vaccine) in 4 syringes. A contains 50, B 100, C 200, D 400 million killed bacteria.
- Typho-Bacterin** (Typhoid Vaccine) in 4 syringes. A contains 125, B 250, C 500, D 1000 million killed bacteria.

PRICE.—Therapeutic package, 4 syringes (A, B, C and D) to each pkg. \$2.00
Single "D" syringes of any Bacterin50

Mulford Bacterins (Bacterial Vaccines) for immunizing or prophylactic use are supplied in packages containing 3 aseptic, glass syringes.

- Cholera Bacterin** (Cholera Vaccine) in 3 syringes containing 500, 1000, 1000 million killed spirilla.
- Meningo-Bacterin** (Meningococcus Vaccine) in 3 syringes containing 500, 1000, 1000 million killed bacteria.
- Scarlatina Bacterin**, immunizing, (Scarlet Fever Vaccine) in 3 syringes containing 250, 500, 1000 million killed streptococci.
- Typho-Bacterin**, immunizing, (Typhoid Vaccine) in 3 syringes containing 500, 1000, 1000 million killed bacteria.
- Typho-Bacterin Mixed** (Typhoid Vaccine Mixed). See price-list for bacterial contents.

PRICE.—For Immunizing and Prophylactic Use (3 syringes to pkg.) \$1.50

H. K. Mulford Co., Chemists, Philadelphia

New York
Chicago

St. Louis
Atlanta

New Orleans
Kansas City

Minneapolis
San Francisco

Seattle
Toronto

PHILADELPHIA COLLEGE OF PHARMACY

FOUNDED 1821

Offers a complete course in Pharmacy, Chemistry, Materia Medica, Botany and Pharmacognosy leading to the degree of Doctor in Pharmacy.

Also instruction in special branches and Post Graduate work.

For full information regarding entrance requirements, tuition, etc., address

J. S. BEETEM, Registrar, 145 N. 10th St., Philadelphia, Pa.



THERE IS ALWAYS SOMETHING BROKEN but folks usually forget about it. If a display assortment of

MAJOR'S CEMENT

on your show case their money would be stimulated and your profit increased because MAJOR'S MAKES MONEY.

Send for advertising matter and free goods offer

Major Manufacturing Company

A. MAJOR, President
461 Pearl St., NEW YORK CITY

SPECIAL ATTENTION.—Drug stores (snaps) for sale and trade in 48 states. Drug stores handled. Drug jobs in 48 states. Physicians, dentists, veterinarians, nurses furnished and located. Established 1904. Strictly reliable. Gilt edge references. Let me know your wants. F. V. KNIEST, R. P., Omaha, Nebr.

General Index to A. Ph. A. Proceedings

Bound in cloth, nearly 600 pages. Covering the years 1852 to 1902, or volumes 1 to 50, inclusive.

Price, Carriage Prepaid, \$2.50

Address the General Secretary.

In Asthma

OF THE BRONCHIAL TYPE

Physicians report gratifying results from the use of our

HYPODERMIC TABLETS

OF

MORPHINE NITRATE.....	1-20 gr.
NITROGLYCERIN.....	1 50 gr.
STRYCHNINE NITRATE.....	1- gr.

You will undoubtedly have calls for them because we are sampling your doctors.

You should stock at least a few tubes.

List prices less trade discount to you are:

60c per 100 70c per 100 in tubes of 20 16c per tube of 20

SHARP & DOHME

BALTIMORE

Chicago—St. Louis—New Orleans—Atlanta—Philadelphia

NEW YORK

The Roessler & Hasslacher Chemical Co.

100 William Street, New York

invite the attention of the Pharmaceutical Profession to their new series of

Peroxygen Products, or Active Oxygen Preparations

VIZ:

SODIUM PERBORATE, a powder which, dissolved in water, furnishes instantaneously Hydrogen Peroxide Solution of alkaline reaction, a non-irritant to mucous membrane, even if applied in powder form. The powder is eight times as strong as ordinary H_2O_2 .

ZINC PEROXIDE, odorless fine powder, antiseptic, bactericide, used in surgery, dermatology, etc.

MAGNESIUM PEROXIDE, for internal use, non-toxic tasteless powder, it replaces bismuth salts in intestinal disinfection.

CALCIUM PEROXIDE, antacid and germicide.

STRONTIUM PEROXIDE, a dermatological agent.

PEROXIDE ZINC SOAP, U. S. Patent 787776, "Life to the Skin," contains actually 10% $Zn O_2$, the only real Peroxide Soap, complying with requirements of National Pure Food and Drugs Act. An Ideal Skin and Toilet Soap.

All the above have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association.

ORDERS FILLED BY THE WHOLESALE DRUG TRADE.

To Colleges of Pharmacy

Do you know that we make a specialty of importing "DUTY-FREE" glassware, apparatus and chemicals for colleges and universities—sending our own representative abroad each year to make our selections?

Do you realize that the German glassware is immensely superior to the American product, and costs much less?

Do you realize how little trouble it is to import your goods? No more than to order from a local dealer.

Tell us what you want—select from any catalogue—and we will quote figures that will surprise you.

THE KAUFFMAN-LATTIMER CO.
COLUMBUS, OHIO

Practical things must find a place even at the holiday season, and what more fitting to claim the druggist's attention than the merits of

N. Y. Q. Products,

and what more worthy of finding a place on his shelves. We ask you to specify this brand, and we will do our part in its making. --

New York Quinine and Chemical Works, Ltd.
New York City

THE SCHOOL OF PHARMACY of the UNIVERSITY OF ILLINOIS

CHICAGO COLLEGE OF PHARMACY

The Fifty-third session begins September 17, 1912.

Courses leading to the degree of Graduate in Pharmacy and of Pharmaceutical Chemist are offered.

For announcement or other information, address

W. B. DAY, Actuary

Michigan Boulevard and Twelfth Street, Chicago, Illinois

PITTSBURGH COLLEGE OF PHARMACY SCHOOL OF PHARMACY UNIVERSITY OF PITTSBURGH

Offers a two years course leading to the degree of Graduate in Pharmacy.
Three years for the degree of Doctor in Pharmacy.

For catalogue address Dr. J. A. Koch, Dean, Pittsburgh, Pa.

DEPARTMENT OF PHARMACY—UNIVERSITY OF MARYLAND (MARYLAND COLLEGE OF PHARMACY 1841-1904)

Lombard and Greene Sts., Baltimore Md.

Complete Course of Lectures and Laboratory Instruction, covering two sessions of thirty-two weeks each. Catalogue giving full information mailed on application to the Dean.



HORLICK IS THE ORIGINATOR OF MALTED MILK

As a result of years of continuous advertising
HORLICK popularized it and created the demand

Attractive Fountain Advertising Hot or Cold Drinks on request
Horlick's Malted Milk Company, Racine, Wis.

THE TOXIC PROPERTIES OF TOBACCO.

"The Lancet," in an investigation regarding the toxic factor in tobacco found the following relative amounts of nicotine in tobacco: Pipe-mixtures, 2.04 to 2.85 per cent.; Egyptian and Turkish cigarettes, 1.38 to 1.74; Virginian cigarettes, 1.4 to 1.6; British cigars 1.24; Havana cigars, 0.64. Tobaccos used for blending contain as much as 4 to 5 per cent. As regards the proportion of nicotine which reaches the mouth of the smoker, it was found that the cigarette yields the least amount of its total nicotine to the smoke formed; the pipe yielding the largest proportion, 70 to 80 per cent., in some cases. As there is here a difference between theory and practice, it was suggested that perhaps, after all, the potent factor in tobacco smoking is not the nicotine. Furfural is commonly distinctive of the smoke from the cheaper kinds of Virginia cigarette. Furfural belongs to the aldehydes, and these have decided pharmacological activity. The poisonous properties of crude whiskey are ascribed to furfural, and the quantity of this aldehyde in one Virginian cigarette may amount to as much as that present in 2 oz. of whiskey. It is only present in traces in pipe and cigar smoke. The throat troubles which have been attributed to cigarette-smoking may be due to the furfural. A number of experiments showed that in pipe-smoke the furfural varies from 0.004 to 0.03 percent. of the weight of the tobacco smoked; in cigar-smoke it was absent altogether; in the smoke of Turkish and Egyptian cigarettes it amounted to only 0.01 percent.; while in the smoke of Virginian or American cigarettes the amount ranged from 0.04 to 0.16 percent. The most irritating smoke was that containing the higher amounts of furfural. Next was considered the relative yields of ammonia and furfural, as these two do not occur simultaneously in tobacco-smoke. Generally speaking, when furfural is present ammonia is usually absent. The inference is that when tobacco yields an excess of ammonia or bases, any aldehyde formed would be neutralized; and that, on the other hand, when the tobacco does not furnish aromatic basic compounds, aldehydes may pass to the smoker's respiratory apparatus raw and unchanged. The conclusion arrived at is, that furfural is an undesirable constituent of tobacco smoke, and there is a probability that the least harmful tobacco will turn out to be that which yields a minimum of or no furfural at all, or any other aldehyde, in the smoke of its partial combustion.—*The Chemist and Druggist.*

American Pharmaceutical Association

Organized: Philadelphia, 1852.

Incorporated: Washington, D. C., 1888.

OFFICIAL ROSTER FOR 1912-1913.*

GENERAL OFFICERS.

President—WILLIAM B. DAY.....Michigan Boulevard and Twelfth Street, Chicago, Ill.
Honorary President—THOS. F. MAIN.....166 Chambers Street, New York, N. Y.
First Vice President—CHAS. M. FORD.....1236 Ogden Street, Denver, Colo.
Second Vice President—CASWELL A. MAYO.....66 West Broadway, New York, N. Y.
Third Vice President—C. HERBERT PACKARD.....7 Central Square, East Boston, Mass.
Treasurer—HENRY M. WHEPLEY.....2342 Albion Place, St. Louis, Mo.
General Secretary and Editor of the Journal—JAMES H. BEAL.....Scio, Ohio
Reporter on the Progress of Pharmacy—C. LEWIS DIEHL.....932 Cherokee Road, Louisville, Ky.
Local Secretary—JOHN O. BURGE.....Nashville, Tenn.

OFFICERS-ELECT FOR 1913-1914.

(To be installed at the 61st Annual Convention.)

President—GEORGE M. BERINGER.....Camden, N. J.
First Vice President—FRANKLIN M. APPLE.....Philadelphia, Pa.
Second Vice President—W. S. RICHARDSON.....Washington, D. C.
Third Vice President—L. D. HAVENHILL.....Lawrence, Kans.
Members of the Council, 1913-14—CHARLES E. CASPARI.....St. Louis, Mo.
CHARLES CASPARI, JR.....Baltimore, Md.
JOHN G. GODDING.....Boston, Mass.

OFFICERS OF THE COUNCIL FOR 1912-1913.

Chairman—EUGENE G. EBERLE.....1804 Jackson Street, Dallas, Tex.
Vice Chairman—F. C. GODBOLD.....3613 Chestnut Street, New Orleans, La.
Secretary—JOSEPH W. ENGLAND.....415 North Thirty-third Street, Philadelphia, Pa.

MEMBERS OF THE COUNCIL FOR 1912-1913.

(Elected by the Association.)

J. H. BEAL, Scio, Ohio.....Term expires 1913
J. P. REMINGTON, Philadelphia, Pa.....Term expires 1913
H. H. KUSBY, Newark, N. J.....Term expires 1913
E. G. EBERLE, Dallas, Tex.....Term expires 1914
GEORGE F. PAYNE, Atlanta, Ga.....Term expires 1914
JAMES M. GOOD, St. Louis, Mo.....Term expires 1914
WILLIAM C. ALPERS, New York, N. Y.....Term expires 1915
FABIUS C. GODBOLD, New Orleans, La.....Term expires 1915
LUCIUS E. SAYRE, Lawrence, Kans.....Term expires 1915

(Elected by Local Branches.)

LEWIS C. HOPP, Northern Ohio Branch, Cleveland, Ohio.....Term expires 1912
E. H. LAPIERRE, New England Branch, Cambridge, Mass.....Term expires 1912
JOHN B. THOMAS, Baltimore Branch, Baltimore.....Term expires 1912
F. J. WULLING, Northwestern Branch, Minneapolis.....Term expires 1912
WM. R. WHITE, Nashville Branch, Nashville, Tenn.....Term expires 1912
J. A. KOCH, Pittsburg Branch, Pittsburg, Pa.....Term expires 1914
PHILIP ASHER, New Orleans Branch, New Orleans, La.....Term expires 1914
JOHN A. MARTIN, Denver Branch, Denver, Colo.....Term expires 1914
HENRY B. FLOYD, City of Washington Branch, Washington, D. C.....Term expires 1914
THOMAS D. McELHENIE, New York Branch, New York, N. Y.....Term expires 1915
ALBERT H. CLARK, Chicago Branch, Chicago, Ill.....Term expires 1915
WILLIAM K. ILHARDT, St. Louis Branch, St. Louis, Mo.....Term expires 1915
FRANKLIN M. APPLE, Philadelphia Branch, Philadelphia, Pa.....Term expires 1915

(Members of the Council Ex-Officio.)

The President, Vice Presidents, General Secretary, Treasurer, Reporter on the Progress of Pharmacy, Secretary of the Council, Local Secretary, Historian, and the Chairmen of the Sections.

* Report corrections to the General Secretary.

COMMITTEES OF THE COUNCIL.

(Elected by the Council.)

COMMITTEE ON UNOFFICIAL STANDARDS.

OTTO RAUBENHEIMER, 1341 Fulton Street, Brooklyn.....	Term expires 1913
GEORGE D. ROSENGARTEN, P. O. Box 1625, Philadelphia.....	Term expires 1913
CHARLES E. VANDERKLEED, 200 First Avenue, Collingswood, N. J.....	Term expires 1913
M. I. WILBERT, 728 Twentieth Street, N. W., Washington, D. C.....	Term expires 1913
GEORGE M. BERINGER (<i>Chairman</i>), 501 Federal Street, Camden, N. J.....	Term expires 1914
H. H. RUSBY, 776 DeGraw Avenue, Newark, N. J.....	Term expires 1914
F. R. ELDRID, 3323 Kenwood Avenue, Indianapolis.....	Term expires 1914
JOHN M. FRANCIS, 240 Seyburn Avenue, Detroit.....	Term expires 1914
J. A. KOCH, Bluff and Pride Streets, Pittsburgh.....	Term expires 1915
THOMAS P. COOK, 114 William Street, New York.....	Term expires 1915
L. D. HAVENHILL, Lawrence, Kan.....	Term expires 1915
E. L. NEWCOMB, 527 Fifth Avenue, S. E., Minneapolis.....	Term expires 1915
HENRY KRAEMER, 424 South Fourth Street, Philadelphia.....	Term expires 1916
EUSTACE H. GANE, 91 Fulton Street, New York.....	Term expires 1916
B. L. MURRAY, Care Merck & Co., New York.....	Term expires 1916
W. A. PUCKNER, 535 Dearborn Avenue, Chicago.....	Term expires 1916

COMMITTEE ON THE NATIONAL FORMULARY.

C. LEWIS DIEHL, <i>Chairman</i>	Louisville, Ky.	H. A. B. DUNNING.....	Baltimore, Md.
CLYDE M. SNOW.....	Chicago, Ill.	SAMUEL L. HILTON.....	Washington, D. C.
A. B. STEVENS.....	Ann Arbor, Mich.	CHAS. H. LA WALL.....	Philadelphia, Pa.
OTTO RAUBENHEIMER.....	Brooklyn, N. Y.	GEO. M. BERINGER.....	Camden, N. J.
LEONARD A. SELTZER.....	Detroit, Mich.	M. I. WILBERT.....	Washington, D. C.
HARRY V. ARNY.....	New York	W. L. SCOVILLE.....	Detroit, Mich.
E. FULLERTON COOK.....	Philadelphia, Pa.	WILLIAM A. HALL.....	Detroit, Mich.
	ADAM WIRTH.....		New Orleans, La.

COMMITTEE ON TRANSPORTATION.

W. BODEMANN, <i>Chairman</i>	Chicago, Ill.	CHAS. B. WHILDEN.....	San Francisco, Cal.
WM. C. ALLEN.....	New York, N. Y.	F. C. GODBOLD.....	New Orleans, La.
H. M. WHELPLEY.....	St. Louis, Mo.	W. S. ELKINS, JR.....	Atlanta, Ga.
CHAS. G. MERRELL.....	Cincinnati, Ohio	CHAS. M. FORD.....	Denver, Colo.
J. O. BURGE.....	Nashville, Tenn.	C. HERBERT PACKARD.....	East Boston, Mass.
CHAS. CASPARI, JR.....	Baltimore, Md.	LOUIS C. HOPP.....	Cleveland, Ohio

AUDITING COMMITTEE.

OTTO F. CLAUS, <i>Chairman</i> , St. Louis.	F. W. SULTAN, St. Louis.
	SOLOMON BOEHM, St. Louis.

COMMITTEE ON INVESTED AND TRUST FUNDS.

JAMES H. BEAL, <i>Chairman</i>	Scio, Ohio	THOS. P. COOK.....	New York
E. G. EBERLE.....	Dallas, Tex.	H. M. WHELPLEY, <i>ex-officio</i>	St. Louis

COMMITTEE ON FINANCE.

J. A. KOCH, <i>Chairman</i>	Pittsburgh	OTTO F. CLAUS.....	St. Louis
	E. H. LAPIERRE, Cambridge, Mass.		

COMMITTEE ON PUBLICATION.

J. W. ENGLAND, <i>Chairman</i>	Philadelphia	F. J. WULLING.....	Minneapolis, Minn.
GEO. M. BERINGER.....	Camden, N. J.	J. L. LEMBERGER.....	Lebanon, Pa.
	F. W. MEISSNER.....		LaPorte, Ind.

Ex-officio Members—THE EDITOR, REPORTER ON THE PROGRESS OF PHARMACY, AND THE TREASURER.

COMMITTEE ON CENTENNIAL FUND.

JOHN G. GODDING.....	Boston	JAMES H. BEAL.....	Scio, Ohio
	J. A. KOCH.....		Pittsburgh.

THE JOURNAL OF THE GENERAL COMMITTEES.

(Appointed by the President.)

WILLIAM PROCTER MEMORIAL FUND.

J. F. HANCOCK, <i>Chairman</i>	Baltimore	F. C. RYAN.....	Detroit
CHARLES CASPARI, JR.....	Baltimore	THOMAS F. MAIN.....	New York
A. R. L. DOHME.....	Baltimore	PARKER C. COOK.....	Baltimore
B. F. FAIRCHILD.....	New York	J. K. LILLY.....	Indianapolis
CASWELL A. MAYO.....	New York	H. S. WELLCOME.....	London, Eng.
E. G. EBERLE.....	Dallas	GEORGE MERRELL.....	Cincinnati
J. L. LEIGFELD.....	San Francisco	JOSE P. ALACAN.....	Havana, Cuba
C. M. FORD.....	Denver	E. L. PATCH.....	Boston
CLEMENT B. LOWE.....	Philadelphia	LEWIS C. HOPP.....	Cleveland
HENRY KRAEMER.....	Philadelphia	JAS. E. HANCOCK.....	Baltimore

PHARMACEUTICAL SYLLABUS.

E. G. EBERLE, 1804 Jackson Street, Dallas, Tex.....	Term expires 1913
HARRY B. MASON, P. O. Box 484, Detroit.....	Term expires 1914
GEORGE M. BERINGER, 501 Federal Street, Camden, N. J.....	Term expires 1915
WILLIAM B. DAY, Michigan Boulevard and Twelfth Street, Chicago.....	Term expires 1916
WILLIS B. GREGORY, 530 Main Street, Buffalo.....	Term expires 1917
HENRY L. TAYLOR, 2 Woodlawn Avenue, Albany, N. Y.....	Term expires 1918
CHARLES CASPARI, JR., 6 East Franklin Street, Baltimore.....	Term expires 1919

COMMITTEE ON U. S. P.

H. A. B. DUNNING, Baltimore, Md.....	Term expires 1912
C. E. CASPARI, St. Louis, Mo.....	Term expires 1913
A. B. LYONS, Detroit, Mich.....	Term expires 1914
WILLIAM MITTELBACH, Boonville, Mo.....	Term expires 1915
REID HUNT, Washington, D. C.....	Term expires 1916
L. D. HAVENHILL, <i>Chairman</i> , Lawrence, Mass.....	Term expires 1917
L. F. KEBLER, Washington, D. C.....	Term expires 1918
H. A. SEIL, Perth Amboy, N. J.....	Term expires 1919
E. F. COOK, Philadelphia, Pa.....	Term expires 1920
E. H. LAPIERRE, Cambridge, Mass.....	Term expires 1921

TIME AND PLACE OF NEXT MEETING.

L. A. SELTZER, <i>Chairman</i>	Detroit	F. M. APPLE.....	Philadelphia
W. H. BROWN.....	Chicago	G. B. KAUFMAN.....	Columbus, Ohio
	THOS. F. MAIN.....		New York, N. Y.

NATIONAL LEGISLATION.

JOHN C. WALLACE, <i>Chairman</i>	New Castle, Pa.	F. A. HUBBARD.....	Boston, Mass.
W. S. RICHARDSON.....	Washington	S. L. HILTON.....	Washington, D. C.
	J. H. BEAL.....		Scio, Ohio

STATUS OF PHARMACISTS IN THE GOVERNMENT SERVICE.

W. S. RICHARDSON, <i>Chairman</i>	Washington, D. C.	S. L. HILTON.....	Washington, D. C.
W. C. SHUPTRINE.....	Savannah, Ga.	W. R. WHITE.....	Nashville, Tenn.
	GEO. F. PAYNE.....		Atlanta, Ga.

ON REVISION OF THE CONSTITUTION AND BY-LAWS.

J. W. ENGLAND, <i>Chairman</i>	Philadelphia	J. H. BEAL.....	Scio
H. M. WHELPLEY.....	St. Louis	G. M. BERINGER.....	Camden
	J. C. WALLACE.....		New Castle, Pa.

PATENTS AND TRADE MARKS.

F. E. STEWART, <i>Chairman</i>	Philadelphia	W. BODEMANN.....	Chicago, Ill.
S. L. HILTON.....	Washington, D. C.	FRANK M. FREERICKS.....	Cincinnati, Ohio
	J. W. ENGLAND.....		Philadelphia, Pa.

BOARD OF CANVASSERS.

H. V. ARNY.....	New York	GEORGE C. DIEKMAN.....	New York
OTTO RAUBENHEIMER.....	New York		

INTERNATIONAL COMMITTEE ON PHARMACEUTICAL NOMENCLATURE.

CASWELL A. MAYO, <i>Chairman</i>	New York	H. M. WHELFLEY.....	St. Louis
JOSEPH P. REMINGTON.....	Philadelphia	G. M. BERINGER.....	Camden, N. J.
E. O. ENGSTROM.....			Pittsfield

ON DRUG REFORM.

L. E. SAYRE, <i>Chairman</i>	Lawrence Kan.	ALBERT SCHNEIDER.....	San Francisco
E. N. GATHERCOAL.....			Chicago

ON WEIGHTS AND MEASURES.

GEORGE C. DIEKMAN, <i>Chairman</i>	New York	C. W. JOHNSON.....	Seattle
H. V. ARNY.....	New York	PHILIP ASHER.....	New Orleans
G. H. MELKER.....			Philadelphia

DELEGATES TO N. W. D. A. 1912.

JAMES H. BEAL.....	Scio, Ohio	FRANK L. CARTER.....	Boston, Mass.
THOS P. COOK.....	New York, N. Y.	THEO. F. MEYER.....	St. Louis, Mo.
JAMES W. MORRISON.....			Chicago, Ill.

DELEGATES TO A. M. A. SECTION ON PHARMACOLOGY.

J. P. REMINGTON, <i>Chairman</i>	Philadelphia	L. F. KEBLER.....	Washington, D. C.
H. M. WHELFLEY.....	St. Louis	G. M. BERINGER.....	Camden
J. H. BEAL.....	Scio, Ohio	OTTO RAUBENHEIMER.....	Brooklyn
H. H. RUSBY.....	Newark, N. J.	THEO. J. BRADLEY.....	Boston
BERNARD FANTUS.....	Chicago	F. J. WUHLING.....	Minneapolis

DELEGATES TO N. A. R. D. 1913.

H. C. SHUPTRINE, <i>Chairman</i>	Savannah, Ga.	W. BODEMANN.....	Chicago, Ill.
SIMON N. JONES.....	Louisville, Ky.	W. C. ANDERSON.....	Brooklyn, N. Y.
FRANK H. FREERICKS.....			Cincinnati, Ohio

PHYSIOLOGICAL TESTING.

E. M. HOUGHTON, <i>Chairman</i>	130 Longfellow Avenue, Detroit
H. C. WOOD, JR.....	434 South Forty-fourth St., Philadelphia
CHARLES R. ECKLER.....	432 East St. Clair Street, Philadelphia
W. A. PEARSON.....	35 Poplar Street, Philadelphia
WILLIAM WORTH HALE.....	1495 Newton Street, N. W., Washington, D. C.

COMMITTEE ON EDITING RULES.

CASWELL A. MAYO, <i>Chairman</i>	New York	HARRY B. MASON.....	Detroit
EYRA J. KENNEDY.....	New York	HUGO KANTROWITZ.....	New York
J. H. BEAL.....			Scio, Ohio

COMMITTEE ON INTERNATIONAL CONGRESS OF PHARMACY.

JOS. P. REMINGTON, <i>Chairman</i>	Philadelphia	ALBERT SCHNEIDER.....	San Francisco
EUGENE G. EBERLE.....			Dallas, Tex.

COMMITTEE ON ORGANIZATION OF LOCAL BRANCHES.

THEO. D. WETTERSTROM, <i>Chmn.</i>	Cincinnati	D. V. WHITNEY.....	Kansas City, Mo.
GEO. B. KAUFFMAN.....	Columbus, O.	F. R. ELDRED.....	Indianapolis
CHARLES W. JOHNSON.....			Seattle

COMMITTEE ON DRUG MARKET.

(Appointed by the Chairman of the Scientific Section.)

EDGAR L. PATCH, <i>Chairman</i>	Boston, Mass.	L. F. KEBLER.....	Washington, D. C.
W. L. SCOVILLE.....	Detroit, Mich.	H. H. RUSBY.....	New York, N. Y.

GENERAL MEMBERSHIP COMMITTEE.

A. H. CLARK, *Chairman*, 74 East Twelfth Street, Chicago.

- Ala.—W. E. BINGHAM, Tuscaloosa.
JAMES C. VAN ANTWERP, Mobile.
- Ariz.—HARRY BRISLEY, Prescott.
R. P. H. ROZIENE, Phoenix.
- Ark.—W. L. DEWOODY, Pine Bluff.
F. SCHACHLEITER, Hot Springs.
- Calif.—ALBERT SCHNEIDER, San Francisco.
GEORGE H. P. LICHTHARDT, Sacramento.
FRED I. LACKENBACH, San Francisco
R. A. LEET, Oakland.
JOSEPH LENGFELD, San Francisco.
- Colo.—S. L. BRESLER, Denver.
FRED W. NITARDY, Denver.
E. L. SCHOLTZ, Denver.
- Conn.—CHARLES A. RAPELYE, Hartford.
JOHN B. EBBS, Waterbury.
- D. C.—W. S. RICHARDSON, Washington.
M. I. WILBERT, Washington.
- Del.—H. K. WATSON, Wilmington.
E. A. TRUITT, Middleton.
- Fla.—J. M. DIXON, Jacksonville.
ERNEST BERGER, Tampa.
- Ga.—WILLIAM S. ELKINS, Atlanta.
MAX MORRIS, Macon.
- Ida.—CLARENCE O. BALLOU, Boise.
H. M. SKEELS, Twin Falls.
- Ill.—C. H. AVERY, Chicago.
GEORGE W. SOHRBECK, Moline.
WILHELM BODEMANN, Chicago.
W. B. DAY, Chicago.
- Ind.—FRANK H. CARTER, Indianapolis.
W. H. RUDDER, Salem.
F. W. MEISSNER, JR., La Porte.
C. B. JORDAN, Lafayette.
A. W. LINTON, Valparaiso.
- Iowa.—WILBER J. TEETERS, Iowa City.
G. SCHERLING, Sioux City.
- Kan.—L. D. HAVENHILL, Lawrence.
MATTHIAS NOLL, Atchison.
M. A. FREIDENBURG, Winfield.
- Ky.—JOHN W. GAYLE, Frankfort.
C. LEWIS DIEHL, Louisville.
- La.—FABIUS C. GODBOLD, New Orleans.
M. T. BRESLIN, New Orleans.
PHILIP ASHER, New Orleans.
- Me.—ALFRED P. COOK, Portland.
M. L. PORTER, Danforth.
C. H. DAVIS, Bangor.
- Md.—H. A. B. DUNNING, Baltimore.
EVANDER F. KELLY, Baltimore.
H. L. MEREDITH, Hagerstown.
- Mass.—C. HERBERT PACKARD, Boston.
E. H. LAPIERRE, Cambridge.
JAMES F. GUERIN, Worcester.
WILLIAM H. GLOVER, Lawrence.
- Mich.—WILLIAM A. HALL, Detroit.
LEONARD A. SELTZER, Detroit.
J. O. SCHLOTTERBECK, Ann Arbor.
W. C. KIRCHGESSNER, Grand Rapids.
- Va.—CHARLES B. FLEET, Lynchburg.
T. A. MILLER, Richmond.
- Wash.—C. W. JOHNSON, Seattle.
CORNLILIUS OSSEWARD, Seattle.
A. F. MAXWELL, Spokane.
- W. Va.—JOHN COLEMAN, Wheeling.
GEORGE O. YOUNG, Buckhannon.
- Wis.—EDWARD WILLIAMS, Madison.
EDWARD HERBERD, La Crosse.
HENRY Z. RUENZEL, Milwaukee.
- Minn.—F. J. WULLING, Minneapolis.
ALBERT D. THOMPSON, Minneapolis.
W. A. FROST, St. Paul.
CHARLES T. HELLER, St. Paul.
- Miss.—H. M. FRASER, University.
C. C. KENDALL, Meridian.
- Mo.—J. W. MACKELDEN, St. Louis.
WM. H. LAMONT, St. Louis.
D. V. WHITNEY, Kansas City.
W. MITTELBACH, Boonville.
CHARLES E. ZINN, Kansas City.
- Mont.—HOWARD ROCKEFELLER, Butte.
LEE WARREN, Billings.
- Neb.—CHARLES R. SHERMAN, Omaha.
AUTUMN V. PEASE, Fairbury.
- Nev.—JOSEPH M. TABER, Elko.
- N. H.—WILLIAM D. GRACE, Portsmouth.
HERBERT E. RICE, Nashua.
- N. J.—GEORGE M. BERINGER, Camden.
CHARLES HOLZHAUER, Newark.
H. A. JORDAN, Bridgeton.
- N. Y.—GEORGE C. DEIKMAN, New York City.
JOSEPH WEINSTEIN, New York City.
CASWELL A. MAYO, New York City.
W. C. ALPERS, New York City.
OTTO RAUBENHEIMER, Brooklyn.
ALBERT M. ROEHRIG, Buffalo.
WARREN L. BRADT, Albany.
- N. C.—E. V. ZOELLER, Tarboro.
E. V. HOWELL, Chapel Hill.
- N. D.—H. I. HAUSSMEN, Grafton.
W. S. PARKER, Lisbon.
- New Mexico.—B. C. RUPPE, Albuquerque.
- Ohio.—LEWIS C. HOPP, Cleveland.
J. H. BEAL, Scio.
THEO. D. WETTERSTROEM, Cincinnati.
GEORGE B. KAUFFMAN, Columbus.
FRANK H. FREERICKS, Cincinnati.
- Okla.—FORESS B. LILLIE, Guthrie.
H. D. KRISELEY, Cechotah.
- Ore.—JOHN A. LAUE, Portland.
G. C. BLAKELEY, The Dalles.
- Pa.—JOSEPH W. ENGLAND, Philadelphia.
W. L. CLIFFE, Philadelphia.
W. MCINTYRE, Philadelphia.
E. FULLERTON COOK, Philadelphia.
JULIUS A. KOCH, Pittsburg.
- R. I.—W. O. BLANDING, Providence.
JAMES O'HARE, Providence.
- S. C.—G. W. EVANS, Anderson.
- S. D.—IRWIN A. KEITH, Lake Preston.
E. C. BENT, Dell Rapids.
- Tenn.—T. J. SHANNON, Sharon.
WILLIAM R. WHITE, Nashville.
IRA B. CLARK, Nashville.
- Tex.—JACOB SCHRODT, Dallas.
ROBERT H. WALKER, Gonzales.
R. H. NEEDHAM, Fort Worth.
- Utah.—F. A. DRUEHL, Salt Lake City.
OTTO R. PETERS, Salt Lake City.
- Vt.—E. W. GILMAN, Marshfield.
W. E. TERRILL, Montpelier.
W. H. ZOTTMAN, Burlington.
- Province of New Brunswick—
M. V. PADDOCK, St. John.
- Province of Nova Scotia—
F. C. STIMSON, Halifax.
- Province of Ontario—
C. F. HEEBNER, Toronto.
- Province of Quebec—
J. E. MORRISON, Montreal.
- Cuba.—JOSE GUILLERMO DIAZ, Havana.
JOSE P. ALACAN, Havana.
- Alaska.—GUY L. SMITH, Douglas.
- Philippine Islands—
ARTHUR NEVILLE, Jolo.
- Porto Rico.—FRED C. BAUM, San Juan.
- Hawaiian Islands—
SAMUEL LOUIS RUMSEY, Honolulu.
- Province of Manitoba—
H. E. J. BLETCHER, Winnipeg.

SUB-COMMITTEES OF THE GENERAL MEMBERSHIP COMMITTEE.

Food and Drug Chemists.

LINWOOD A. BROWN.....Lexington, Ky. J. H. BEAL.....Scioto, O.
THEO. D. WETTERSTROM.....Cincinnati

Faculty Members.

H. M. WHELPLEY.....St. Louis, Mo. THEO. J. BRADLEY.....Boston, Mass.
C. A. DYE.....Columbus, Ohio CHAS. F. MOULTON.....Bozeman, Mont.

Board Members.

R. H. WALKER.....Gonzales, Texas E. O. ENGBROM.....Pittsfield, Mass.
F. C. DODDS.....Springfield, Ill.

Drug Clerks.

A. F. SALA.....Winchester, Ind. D. N. ROBIN.....Pittsburgh, Pa.

Women Members.

MISS ANNA G. BAGLEY.....Columbus, Ohio MRS. M. M. GRAY.....Chicago
MISS ZADA M. COOPER.....Iowa City, Ia.

Wholesale Druggists and Manufacturers.

JAMES W. MORRISON.....Chicago ALBERT PLAUT.....New York
WILLIAM J. SCHIEFFELIN.....New York

OFFICERS OF THE SECTIONS.

(Elected by the Several Sections.)

SECTION ON SCIENTIFIC PAPERS.

Chairman—FRANK R. ELDRED.....3323 Kenwood Avenue, Indiana, Ind.
First Vice Chairman—JOHN M. FRANCIS.....210 Seyburn Avenue, Detroit, Mich.
Second Vice Chairman—WILBUR L. SCOVILLE.....81 Melbourne Avenue, Detroit, Mich.
Secretary—FREEMAN P. STROUP.....145 North Tenth Street, Philadelphia, Pa.

SECTION ON PHARMACOPŒIAS AND FORMULARIES.

Chairman—L. D. HAVENHILL.....1539 Vermont Street, Lawrence, Kans.
Secretary—E. FULLERTON COOK.....145 North Tenth Street, Philadelphia, Pa.

SECTION ON EDUCATION AND LEGISLATION.

Chairman—WILBUR J. TEETERS.....Iowa College of Pharmacy, Iowa City, Ia.
Secretary—FRANK H. FREERICKS.....1215-1216 Mercantile Library Building, Cincinnati, Ohio
Associates—{ LOUIS EMANUEL.....Second Avenue and Grant Street, Pittsburgh, Pa.
ZADA M. COOPER.....124 Bloomington Street, Iowa City, Ia.
HUGH CRAIG.....100 William Street, New York, N. Y.

SECTION ON PRACTICAL PHARMACY AND DISPENSING

Chairman—J. LEON LASCOFF.....Lexington and Eighty-third Street, New York, N. Y.
Secretary—FERDINAND W. NITARDY.....1418 Cherokee Street, Denver, Colo.
Associate—CORNELIUS OSSEWARD.....Cobb Building, Fourth and University Streets, Seattle, Wash.

SECTION ON COMMERCIAL INTERESTS.

Chairman—AUTUMN V. PEASE.....408 Fourth Street, Fairbury, Neb.
Secretary—WILLIAM R. WHITE.....311 Grace Avenue, Nashville, Tenn.
Associates—{ HERMAN C. SHUPTRINE.....229 Congress Street, West, Savannah, Ga.
G. C. KENDALL.....4 South Twenty-second Avenue, Meridian, Miss.
W. A. MCCUTCHEN.....Luther, Okla.

SECTION ON HISTORICAL INTERESTS.

Chairman—JOHN G. GODDING.....278 Dartmouth Street, Boston, Mass.
Secretary—FREDERICK T. GORDON.....2113 West Norris Street, Philadelphia, Pa.
Historian—CASWELL A. MAYO.....62 68 West Broadway, New York, N. Y.

OFFICERS OF THE LOCAL BRANCHES, 1912-1913.

(The General Secretary should have prompt notice of corrections and changes.)

CHICAGO BRANCH.

President—J. H. WELLS.
First Vice President—S. K. SASS.*Second Vice President*—WILLIAM GRAY.
Third Vice President—MRS. M. M. GRAY.
Secretary-Treasurer—W. B. DAY.*Committee Chairmen.**Practical Pharmacy*—J. A. BECKER.
Medical Relations—BERNARD FANTUS.*Publicity*—OTTO BRUDER.
Legislation—J. P. CROWLEY.
Council Representative—A. H. CLARK.

NORTHERN OHIO BRANCH.

President—L. C. HOPP.*Vice President*—W. T. HANKEY.
Secretary-Treasurer—T. BERNARD TANNER.

PHILADELPHIA BRANCH.

President—F. E. STEWART.
First Vice President—SAMUEL C. HENRY.
Second Vice President—E. FULLERTON COOK.*Treasurer*—WILLIAM MCINTYRE.
Secretary—AMBROSE HUNSBERGER.
Council Representative—FRANKLIN M. APPLE.*Committee Chairmen.**Practical Pharmacy*—PAUL L. MCCONOMY.*Professional Relations*—FRANK E. MORGAN.
Membership—OTTO KRAUS.

PHILADELPHIA BRANCH.

(Scientific Section.)

President—C. H. KIMBERLY.*Secretary*—F. P. STROUP.

PITTSBURG BRANCH.

President—ANDREW CAMPBELL.
First Vice President—LOUIS SAALBACH.
Second Vice President—PETER G. WALTER.*Third Vice President*—LEONARD K. DARBAUER.
Secretary—B. E. FRITCHARD.
Treasurer—P. HENRY UTECH.*Committee Chairmen.**Membership*—CHARLES E. WILLETS.
Practice—FREDERICK J. BLUMENSCHNEIN.*Medical Relations*—GEORGE W. KUTSCHER.
Education and Legislation—JAMES H. BEAL.

CITY OF WASHINGTON BRANCH.

President—LEWIS FLEMER.
First Vice President—LYMAN F. KEBLER.
Treasurer—WYMOND H. BRADBURY.*Second Vice President*—HENRY E. KALUSOWSKI.
Secretary and Council Member—HENRY B. FLOYD.*Committee Chairmen.**Membership*—HERBERT C. EASTERDAY.
Legislation—WILLARD S. RICHARDSON.*Medical Relations*—FRANK C. HENRY.
Scientific Communications—RODNEY H. TRUE.
Publicity—MARTIN J. WILBERT.

NEW ENGLAND BRANCH.

President—CHARLES F. NIXON.*Vice President*—ALBERT W. MESERVE.
Secretary-Treasurer—R. ALBRO NEWTON.*Committee Chairmen.**Professional Relations*—FRANK F. ERNST.*Membership*—WILLIAM H. GLOVER.

BALTIMORE BRANCH.

President—E. F. KELLY.*Vice President*—W. M. FOUCH.
Secretary-Treasurer—E. W. HODSON.*Committee Chairmen.**Membership*—H. A. B. DUNNING.
Professional Relations—J. F. HANCOCK.*Science and Practice*—H. P. HYNSON.
Education and Legislation—J. E. HANCOCK.

DENVER BRANCH.

President—JOHN BEST.
First Vice President—L. B. BRIDHAM.*Second Vice President*—C. H. SKINNER. . .
Secretary-Treasurer—F. W. NITARDY.

NEW YORK BRANCH.

President—GEORGE C. DIEKMAN.
Treasurer—JOSEPH WEINSTEIN.

Vice President—C. D. BIGELOW.
Secretary—HUGH CRAIG.

Committee Chairmen.

Progress of Pharmacy—OTTO RAUBENHEIMER.
Education and Legislation—THOS. P. COOK.

Professional Relations—J. LEON LANSOLF.
Membership—CASWELL A. MAYO.

NASHVILLE BRANCH.

President—J. O. BURGE.
First Vice President—E. A. RUDDIMAN.

Secretary—WILLIAM R. WHITE.

Committee Chairmen.

Membership—C. C. YOUNG.
Trade Interests—M. E. HUTTON.

Legislation—IRA B. CLARK.
National Formulary—R. L. EVES.

NORTHWESTERN BRANCH.

President—STEWART GAMBLE.

Secretary-Treasurer—EDWIN L. NEWCOMB.

ST. LOUIS BRANCH.

President—WM. K. ILHARDT.
First Vice President—J. A. WILKERSON.

Treasurer—CARL T. BUEHLER.

Second Vice President—ARTHUR C. SCHUELLER, JR.
Secretary—WM. H. LAMONT.

Advisory Board—N. EMERY WILLIAMS, DELTA E. COMBS, LOUIS LIEBERSTEIN.

NATIONAL WHOLESALE DRUGGISTS' ASSOCIATION.

President—ALBERT PLAUT.....New York, N. Y.
First Vice President—WILLIAM B. SIBONG.....Milwaukee, Wis.
Second Vice President—JOHN A. GALLAGHER.....Kansas City, Mo.
Third Vice President—BENJAMIN A. JACKSON.....Providence, R. I.
Fourth Vice President—MARION WARD.....Indianapolis, Ind.
Fifth Vice President—LYNN FORT.....Atlanta, Ga.
Secretary—J. E. TOMS.....81 Fulton Street, New York, N. Y.
Treasurer—SAMUEL E. STRONG.....Cleveland, O.
General Representative—F. E. HOLLIDAY.

NATIONAL ASSOCIATION BOARDS OF PHARMACY.

WILLIAM MITTELBACH, President
Boonville, Mo.

I. P. GAMMON, First Vice-President
Boston, Mass.

II. C. SHUPTRINE, Second Vice-President
Savannah, Ga.

MISS KITTIE HARBORD, Third Vice-President
Salem, Ore.

A. F. SALA, Secretary-Treasurer
Winchester, Indiana.

Executive Committee

T. A. MILLER, Chairman, 1913.....Richmond, Va.
C. E. ZINN, 1914.....Kansas City, Mo.

J. C. BURTON, 1915.....Stroud, Okla.
WILLIAM MITTELBACH.....Ex-Officio
A. F. SALA.....Ex-Officio

Syllabus Committee

C. O. BIGELOW, 7 years.....New York City
W. H. RUDDER, 6 years.....Salem, Ind.
E. O. ENGSTROM, 5 years.....Pittsfield, Mass.
D. J. JONES, 1 year.....Watertown, S. D.

S. L. HILTON, 4 years.....Washington, D. C.
CHARLES GEITNER, 3 years.....St. Louis, Mo.
JOHN CULLY, 2 years.....Ogden, Utah

Committee to Arrange Reciprocal Interchange with Cuba

E. BERGER, Chairman.....Tampa, Fla.
H. L. HAUSSMAN.....Grafton, N. D.

J. F. DOWDY.....Little Rock, Ark.

Questions and Methods Committee

FRANK KOSS, Chairman.....Fremont, Neb.
BURTON CASSADAY.....West Terre Haute, Ind.

MASON G. BEEBE.....Burlington, Vt.
W. P. PORTERFIELD.....Fargo, N. D.

Legislative Committee

ED. WILLIAMS, Chairman.....Madison, Wis.
H. L. MEREDITH.....Hagerstown, Md.

H. C. SHUPTRINE.....Savannah, Ga.

Committee on Constitution and By-Laws

E. BERGER, Chairman.....Tampa, Fla.
I. W. CLEMENTS.....Marengo, Iowa

T. A. MILLER.....Richmond, Va.

Publicity Committee

M. W. FRIEDENBERG.....Winfield, Kan.

Active Members

Alabama	Florida	Kentucky	Missouri	Oregon	Virginia
Arkansas	Georgia	Louisiana	Nebraska	South Dakota	West Virginia
Arizona	Idaho	Maine	New Mexico	Tennessee	Wisconsin
Connecticut	Illinois	Maryland	North Dakota	Texas	
Delaware	Indiana	Massachusetts	Ohio	Utah	
District of Columbia	Iowa	Michigan	Oklahoma	Vermont	

Associate Members

Colorado	Minnesota	North Carolina	Wyoming	Kansas	New York	Pennsylvania
----------	-----------	----------------	---------	--------	----------	--------------

ROSTER OF THE NATIONAL ASSOCIATION OF RETAIL DRUGGISTS

Officers for 1912-1913

<i>President</i>.....HENRY W. MERRITT, Plains, Pa.	<i>3d Vice-President</i>.....H. S. KEABLES, Pella, Iowa
<i>1st V.-President</i> , SOL. A. ECKSTEIN, Milwaukee, Wis.	<i>Treasurer</i>.....GRANT W. STEVENS, Detroit, Mich.
<i>2d Vice-President</i> , H. W. RIETZKE, St. Paul, Minn.	<i>Secretary</i>.....THOS. H. POTTS, Chicago, Ill.

Executive Committee

CHAS. H. HUHNS, <i>Chairman</i>.....Minneapolis, Minn.	H. C. SHUPTRINE.....Savannah, Ga.
A. E. ZUBER.....Chicago, Ill.	J. ARTHUR BEAN.....Boston, Mass.
H. B. GUILFORD.....Rochester, N. Y.	SAMUEL C. HENRY.....Philadelphia, Pa.

Department Heads

CHARLES M. CARR..... <i>Publicity Director</i>	OTTO E. BRUDER, <i>Director U. S. P. and N. F.</i>
J. C. SINGER..... <i>General Organizer</i>	<i>Propaganda</i>

STANDING COMMITTEES FOR 1911-1912

National Legislation

W. S. RICHARDSON, <i>Chairman</i>.....Washington, D. C.	FRANK H. FREERICKS.....Cincinnati, O.
JOHN C. WALLACE.....New Castle, Pa.	JAMES F. FINNERAN.....Boston, Mass.
W. S. ELKIN, JR.....Atlanta, Ga.	C. P. GLADDING.....Hartford, Conn.
CHAS. F. MANN.....Detroit, Mich.	THOS. STODDARD.....Buffalo, N. Y.
EDWARD WILLIAMS.....Madison, Wis.	SIMON N. JONES.....Louisville, Ky.

Pharmacy Laws

J. F. GUERIN, <i>Chairman</i>.....Worcester, Mass.	TRUMAN GRIFFIN.....Minneapolis, Minn.
J. F. KUTCHBAUCH.....Cincinnati, O.	H. C. FRECH.....Savannah, Ga.
SAM'L C. DAVIS.....	Nashville, Tenn.

Fraternal Relations

STEWART GAMBLE, <i>Chairman</i>.....Minneapolis, Minn.	CHARLES BRUNSTROM.....Moline, Ill.
HERMAN KOESTER.....Galveston, Tex.	GEO. W. PAYNE.....Providence, R. I.
E. H. LYFORD.....	Berlin, N. H.

Form of Organization

THOS. S. ARMSTRONG, <i>Chairman</i>.....Plainfield, N. J.	M. A. STOUT.....Bluffton, Ind.
JOHN T. ROE.....Mobile, Ala.	CHARLES H. ACHELPHOL.....Quincy, Ill.
W. W. IRWIN.....	Wheeling, W. Va.

Auditing

J. EDWARD COONEY, <i>Chairman</i>.....Rochester, N. Y.	GEO. W. McDUFF.....New Orleans, La.
L. E. PELLEW.....Macon, Ga.	OTTO N. KADEL.....Terre Haute, Ind.
M. H. GOODALE.....	Battle Creek, Mich.

Transportation

F. W. R. PERRY, <i>Chairman</i>.....Detroit, Mich.	J. G. MCBRIDE.....University Place, Nebr.
M. S. KAHN.....Baltimore, Md.	JAMES P. WOOD.....New Haven, Conn.
RALPH E. DORLAND.....Decatur, Ill.	J. L. AVIS.....Harrisonburg, Va.
J. GEO. SCHNUERER.....Cleveland, O.	ROY COTTER.....Tampa, Fla.
M. NOLL.....Atchison, Kans.	H. S. KEABLES.....Pella, Ia.
W. D. WHITE.....Wilkes-Barre, Pa.	MAURICE P. SCHWARTZ.....Indianapolis, Ind.
WM. H. BECK.....Des Moines, Ia.	HENRY HUBERT, JR.....Butte, Mont.
A. R. EBERLE.....	Watertown, Wis.

Telephones

WILHELM BODEMANN, <i>Chairman</i>.....Chicago, Ill.	D. J. REESE.....Philadelphia, Pa.
A. W. KILER.....Columbus, O.	ROBERT K. SMITHER.....Buffalo, N. Y.
W. F. FEDERMANN.....	Kansas City, Mo.

U. S. P. and N. F. Propaganda

H. J. HOLTHOEFER, <i>Chairman</i>.....Chicago, Ill.	WALTER D. JONES.....Savannah, Ga.
LOUIS EMANUEL.....Pittsburg, Pa.	LINCOLN WILSON.....Denver, Colo.
HENRY O. A. HUEGEL.....	St. Louis, Mo.

Advertising

JOSEPH F. FORBRICH, <i>Chairman</i>.....Chicago, Ill.	CHARLES H. HUHNS.....Minneapolis, Minn.
JAMES P. CROWLEY.....	Chicago, Ill.

Proctor Memorial

JOHN W. LOWE, <i>Chairman</i>.....Boston, Mass.	EDGAR R. SPARKS.....Burlington, N. J.
W. I. GATES.....Whiteville, Tenn.	THEO. F. HAGENOW.....St. Louis, Mo.
CHARLES E. FOX.....	Roanoke, Va.

Public Relations

DR. W. C. ANDERSON, <i>Chairman</i>.....Brooklyn, N. Y.	J. A. SIEBERZ.....Louisville, Ky.
D. G. WISE.....Atlanta, Ga.	P. B. MORIARTY.....Worcester, Mass.
EDW. T. YATES.....	Omaha, Neb.

DIRECTORY OF STATE ASSOCIATIONS.*

ALABAMA. Meets at Talladega Springs, 1913

President—C. T. RUFF.....Montgomery *Secretary*—W. E. BISHAM.....Tuscaloosa

ARIZONA. Meets at Tucson, November 4, 1912

President—HARRY BRISLEY.....Prescott *Secretary*—T. E. THORPE.....Phoenix

ARKANSAS. Meets at Hope, May, 1913

President—J. J. WARD.....Hope *Secretary*—MISS MARY A. FEIN.....Little Rock

CALIFORNIA. Meets at San Jose, 1913

President—E. A. BAER.....San Francisco *Secretary*—K. B. BOWERMAN.....San Francisco

COLORADO. Meets at Glenwood Springs, 1913

President—E. G. FINE.....Boulder *Secretary*—CHAS. J. CLAYTON.....Denver

CONNECTICUT. 1913

President—S. M. ALLER.....South Norwalk *Secretary*—P. J. GARVAN.....Bethel

DELAWARE. 1913

President—R. M. KAUFFMAN.....Seaford *Secretary*—WALTER L. MORGAN.....Wilmington

DISTRICT OF COLUMBIA

President—F. T. STONE.....Washington *Secretary*—C. J. FUHRMANN.....Washington

FLORIDA. Meets at Tampa, 1913

President—MACON THORNTON.....Ormond *Secretary*—J. H. HAUGHTON.....Palatka

GEORGIA. Meets at Columbus, 1913

President—JACOB WINCHESTER RIDOUT.....Macon *Secretary*—T. A. CHEATHAM.....Atlanta

IDAHO. Meets at Boise, May 7-9, 1913

President—CHARLES T. JOY.....Boise *Secretary*—DONALD S. WHITEHEAD.....Boise

ILLINOIS. Meets at Quincy, June, 1913

President—JAMES H. WELLS.....Chicago *Secretary*—W. B. DAY.....Chicago

INDIANA. Meets at Lake Wawasee, 1913

President—C. A. HAUPT.....Terre Haute *Secretary*—MAURICE P. SCHWARTZ.....Indianapolis

IOWA. Meets at Waterloo, 1913

President—FRANK SHANE.....Eldon, Ia. *Secretary*—AL FALKENHAINER.....Algona

KANSAS. Meets at Lawrence, May 27-29, 1913

President—CLARENCE C. REED.....Salina *Secretary*—D. VON RIESEN.....Marysville

KENTUCKY. 1913

President—CLYDE GRADY.....Smith Mills *Secretary*—J. W. GAYLE.....Frankfort

LOUISIANA. 1913

President—W. E. ALLEN.....Monroe *Secretary*—GEORGE W. McDUFF.....New Orleans

MAINE. 1913

President—E. W. MURPHY.....Portland *Secretary*—M. L. PORTER, M. D.....Danforth

MARYLAND. Meets at Blue Mountain House, September 3-6, 1913

President—JAMES E. HANCOCK.....Baltimore *Secretary*—E. FRANK KELLY.....Baltimore

MASSACHUSETTS. 1913

President—WILLIAM S. BRIRY.....Melrose *Secretary*—J. F. GUERIN.....Worcester

MICHIGAN. Meets at Muskegon, August 6-8, 1913

President—E. W. AUSTIN.....Midland *Secretary*—M. H. GOODALE.....Battle Creek

MINNESOTA. Meets at St. Paul, 1913

President—TRUMAN GRIFFIN.....Minneapolis *Secretary*—F. A. KLENERT.....Minneapolis

* Notice of corrections or changes should be sent to J. H. Beal, Scio, Ohio. The JOURNAL is indebted to the Druggists' Circular for a portion of the data found in this table.

ONTARIO
COLLEGE OF PHARMACY
44 GERRARD ST. E.
TORONTO.

THE JOURNAL OF THE

MISSISSIPPI. Meets at Gulfport, 1913

President—T. A. HOLCOMBE.....Greenville Secretary—H. M. FASER.....University

MISSOURI. 1913

President—HENRY O. A. HUEGEL.....St. Louis Secretary—H. M. WHELPLEY.....St. Louis

MONTANA. 1913

President—C. F. CHAPPLE.....Billings Secretary—W. R. MONTGOMERY.....Butte

NEBRASKA. 1913

President—H. L. HARPER.....Beatrice Secretary—J. G. MCBRIDE.....University Place

NEVADA. No Association

NEW HAMPSHIRE. Meets at New Castle, June 24-26, 1913

President—A. J. PRECOURT.....Manchester Secretary—C. G. DUNNINGTON.....Manchester

NEW JERSEY. Meets at Princeton, June 25-26, 1913

President—DAVID STRAUSS.....Newark Secretary—FRANK C. STUTZLEN.....Elizabeth

NEW MEXICO. Meets at New Castle, 1913

President—R. H. DANIEL.....Roswell Secretary—MRS. M. L. POWELL.....Albuquerque

NEW YORK. 1913

President—L. J. SCHLESINGER.....Yonkers Secretary—EDWARD S. DAWSON.....Syracuse

NORTH CAROLINA. 1913

President—J. G. M. CORDON.....Clayton Secretary—J. G. BEARD.....Chapel Hill

NORTH DAKOTA. Meets at Minot, August, 1913.

President—A. S. SIGURDSON.....Valley City Secretary—W. S. PARKER.....Lisbon

OHIO. Meets at Columbus, June 17, 1913

President—H. F. VORTKAMP.....Lima Secretary—THEO. D. WETTERSTROEM.....Cincinnati

OKLAHOMA. Meets at Lawton, 1913

President—C. A. DOW.....Pondcreek Secretary—A. W. WOODMANCY.....Oklahoma City

OREGON. 1913

President—H. J. MARTIN.....Portland Secretary—A. W. ALLEN.....Portland

PENNSYLVANIA. Meets at Forest Park, June 24-26, 1913

President—LOUIS SAALBACH.....Pittsburgh Secretary—EDGAR F. HEFFNER.....Lock Haven

RHODE ISLAND. Meets at Providence Quarterly

President—E. T. COLTON.....Providence Secretary—CLARENCE BOWMER.....Providence

SOUTH CAROLINA. Meets at Glenn Springs, 1913

President—O. F. HART.....Columbia Secretary—F. M. SMITH.....Charleston

TENNESSEE. Meets at Memphis, July, 1913

President—E. C. FINCH.....Waverly Secretary—T. J. SHANNON.....Sharon

TEXAS. Meets at Galveston, June 17, 1913

President—H. C. JACKSON.....Austin Secretary—E. G. EBERLE.....Dallas

UTAH. 1913

President—CHARLES VANDYKE.....Salt Lake City Secretary—T. L. HALLIDAY.....Salt Lake City

VERMONT. 1913

President—COLLINS BLAKELY.....Montpelier Secretary—W. E. TERRILL.....Montpelier

VIRGINIA. Meets at Old Point Comfort, July 8-11, 1913

President—C. D. FOX.....Roanoke Secretary—E. L. BRANDIS.....Richmond

WASHINGTON. 1913

President—WILL A. CLIZER.....Spokane Secretary—ALBERT H. DEWEY.....Seattle

WEST VIRGINIA. Meets at White Sulphur Springs, 1913

President—W. C. PRICE.....Charleston Secretary—C. A. NEPTUNE.....Parkersburg

WISCONSIN. 1913

President—SOLLMAN A. ECKSTEIN.....Milwaukee Secretary—E. B. HEIMSTREET.....Palmyra

WYOMING. No Association

Restricted Book

The borrowing of this book is subject to the restriction as checked below.

1. May be used only in the library, not to be withdrawn at any time
2. May only be withdrawn from 4 P.M. until 9 A.M. of the following day.
3. May be borrowed for a period of 24 hours.
4. May be borrowed for a period of 7 days.

ONTARIO COLLEGE
OF PHARMACY

STORAGE

NAME OF BORROWER

DATE

nd

attle

ersburg

...Palmyra



